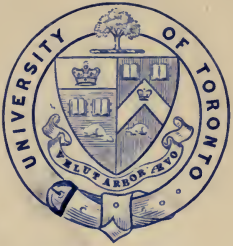
THE ESSENTIALS OF TEACHING



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THE ESSENTIALS OF TEACHING

BY THE

Charles Sherwill

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PREFACE.

This little book embodies the results of the writer's observation and experience, extending over a period of thirty years, during which he held the office of Lecturer and Trainer in the Art of Teaching at St. Mark's College, Chelsea. The concise statement it contains of what he regards as "The Essentials of Teaching," will he trusts prove helpful to many who, as yet, have had but little opportunity of gathering practical wisdom for themselves.

Although the title of this little work is sufficient to indicate its general character and limited scope, it may not be amiss to state that it has been especially written as a text-book for the use of Candidates preparing for the Queen Scholarship Examination, and as an aid to First-year Students in Training Colleges, whether for men or women.

To his old pupils of St. Mark's the author desires to dedicate this small contribution to the cause of education, in the hope that it may serve to revive old thoughts, to rekindle old enthusiasms, and to recall old memories of a not unpleasant nature now that "Criticism Lessons" are to them an ordeal of bygone days.

C. S. D.

Chelsea, May, 1899.

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ESSENTIALS OF TEACHING.

THE TEACHER AND HIS WORK.

SPIRIT OF THE WORKER.

1. **Natural Aptitude for Teaching.**—The teacher is said to be born, not made, and to a certain extent this is true. To excel in teaching one must have a natural liking and aptitude for the work. That aptitude, however, consists more in the natural power of exercising authority and personal influence than in any natural gift for imparting knowledge. The power of teaching, so far as it consists in giving instruction and mental culture, can be largely acquired by observation and training, but the power of winning the hearty co-operation of children, and of inspiring them with the desire to learn and to gain their teacher's approbation is, in no small measure, inborn. So far as personal influence is dependent on the possession of a strong will, a loving and sympathetic nature, a lively disposition and an even temper, it is the result of natural gifts, but such influence is also due to personal character, and that of course is not the simple outgrowth of natural propensities and powers.

Success in any work depends mainly on the spirit of the worker. When the heart is in the right place, when there is a genuine desire to make the most of one's powers in the service of God and his fellow-men, when one does with all his might the work he has found to do, success usually crowns the endeavour. And there is no reason for thinking that teaching is any exception to the rule. Whilst then it would be unwise to enter on the profession of a teacher without a natural aptitude for instructing and influencing children, no one who finds himself in that profession need despair of ultimate success, if he has high aims, a steadfast purpose, good common sense, the courage to tackle difficulties, and the gift of perseverance under discouragement.

2. Teacher's Aims and Influence.—On the other hand, any young recruit, however gifted, who has entered the ranks of "the army of light," as the whole body of teachers has been aptly called, with no higher aim than to make a living for himself, is no better than an interloper. The profession of a teacher is a high calling, and can only be worthily and successfully followed by one who has the desire to make the little world, in which he finds his lot cast, a little wiser and better before he leaves it. The man who is looking to teaching, as simply a means of earning a livelihood, had better look elsewhere. He will be sure to find school-keeping mere drudgery and a constant source of disquietude and unhappiness.

You have, as a teacher, to do with the mind and character of your pupils. Mere mechanical work must be a failure and end in disappointment and disgust. Only mind can influence mind, only character can mould character. What you would have your pupils be and do, you must be and do yourself. I would suggest as your motto, *Esse non videri*, to be not to seem. The influence that tells upon another must come from the depths of one's being. It is not the part a man plays, or the character he assumes, but what he really is—it is this which really tells, which makes its influence felt. And remember that it is the influence which a teacher has over the life and character of his scholars, that takes off the feeling of drudgery from his work and invests it with a living interest.

3. Conditions of Happiness as a Teacher.—But if you are to be happy in your work as a teacher, high aims and good intentions are not sufficient. There are conditions of happiness which must be fulfilled. No person can be happy as a teacher who does not take a delight in ministering to the happiness of others, and no one can find the schoolroom a happy place for himself unless he can make it so for his scholars. If, therefore, you would be happy as a teacher, you must not only be true to your calling but equal to its demands. You must not only have your heart in your work, but your scholars must have theirs too; and to effect this, you must be able to make them interested in their studies and happy at their lessons. When you are able to command the willing attention of your pupils by the attractiveness of your teaching, and to win their cheerful obedience by your personal influence, then, and not till then, will you derive real pleasure from your occupation as a teacher.

One thing more. If you would have your work a perpetual source of refreshment, and not like an intermittent spring, which bubbles up at uncertain intervals, you must feel convinced that the task of educating the young is the most hopeful and fruitful in which it is possible to engage. It is true that even the best of teachers meet with many sore discouragements and feel at times depressed and despondent, but as a rule, they find their recompense in the assurance that their efforts will not in the end prove fruitless. Every true teacher would be ready to recite as a part of his creed: It is my happy lot, as a teacher of the young, to sow the good seed in the morning of life whilst the ground is comparatively free; it is my good fortune to have the moulding of human character at a time when the nature to be worked on is most plastic, when the heart and mind are most impressible and most susceptible of lasting impressions.

What I have said will serve to indicate the spirit of the true worker in the educational field; let us next consider the nature of the work to be done there.

NATURE OF THE WORK.

1. Value of Education.—When a child goes to school, he naturally thinks it is simply to learn, to gain knowledge. He does not know that either parents or teachers have anything else in view. In the same way, a young teacher is at first prone to think that the work which lies before him consists almost entirely in giving instruction, in making his scholars learn. This is, no doubt, an important part of his duty, but that duty involves much more. We have not merely to instruct but to educate, not merely to impart knowledge but to draw out a child's powers, not merely to furnish his mind with facts but to strengthen his mental faculties, not merely to make him more learned but better and wiser for his learning.

Consider your own education at school. Its worth depends on the kind of person it has helped to create, not chiefly on the amount you know, but on your power to apply what you know, not chiefly on the extent of your knowledge, but on the effect which its acquisition has produced on your mind and character. The worth of your education is to be measured not by the number of facts that you have accumulated, but by the interest that you take in the things around you, by the sympathy and admiration you feel for all that is good and beautiful, by your aims in life, by the influence which your instructors have brought to bear upon your heart and conscience. In brief, the value of the education you have received is in proportion to the happy effect it has had in moulding your character, in developing the powers of your intellect, in cultivating your tastes, in inspiring you with noble ambitions; in a word, on what you are in yourself, rather than on what you possess in the way of knowledge.

d. Must fit to make a living and a life too: only one side given [illegible] practical.

2. Scope of Education.—These considerations will enable you to see something of the real nature of the work in which you are engaged. You have to give instruction but in such a way as really to educate. Mere instruction makes a pupil better informed and more learned, education aims at making him intelligent and wise, able to apply his knowledge and to make a good use of it; in brief, its aim is to make him an abler and a better man.

The true teacher then has for his field of labour the hearts and minds of his scholars, and not merely their powers of learning and remembering. The success of his labours should be estimated by the kind of persons he sends out into the world at the end of their school life; by the part they play in life, by what they actually do in the world, by what they are in themselves, by what they have the power to become.

It should be the teacher's aim so to instruct his pupils as to give them the power and the desire to carry on their education on leaving school. There are of course some children, in every school, who hate books and discard them on leaving school. But if that is the general effect of the course of education in any school, it is a sure sign that the wrong spirit presides there. Where the true educator is at work, there is a constant endeavour to instruct in such a way as to give the children an increasing power of gaining knowledge by their own independent efforts, and a growing desire to do so; that is, the true educator whilst imparting knowledge always seeks to cultivate the mind and to give a taste for learning. — both ad

3. Nature of Training.—The teacher's work, in fact, consists not merely in instructing, but in training. By training a child is meant setting his faculties to work in order to promote their development, just as training the voice means putting it through certain exercises with the view of unfolding its powers. Instruction merely gives a pupil directions for doing a thing, but training sets him to work and directs him in doing it. Training, in fact, implies actual practice in doing a thing under proper guidance. To "train up a child in the way he should go," is not merely to point out the right way, but to help him to walk in it; not merely to teach the child certain moral and religious truths, but to induce him, if possible, to put them into practice, by force of example and influence. Mental training is also concerned with actual practice, for it sets the child's mental faculties in action, and aims at his working out certain results by the exercise of his own powers, under the directing and stimulating influence of the teacher. It is opposed to that sort of teaching which requires the learners simply to keep their ears open and to remember what they are told.

Your work, then, goes far beyond the imparting of instruction. Instruct, of course, you must, but so as to educate, so as to draw out and strengthen a child's moral and mental powers by setting them in action. In a word, your duty is to train and not merely to instruct. To do this successfully, you must possess a knowledge of the material you have to work on. This will form the next subject of inquiry.

CHILDREN AND THEIR TREATMENT.

NATURE OF CHILDREN.

1. Traits of Childhood.—Success in teaching and managing children depends, in no small measure, upon a knowledge of their natural tendencies and common characteristics. It might have been thought that young teachers, having at no remote time crossed the border-line of childhood, would have a clear remembrance of childhood's wants and ways. But such is not the case. The younger the teacher, the less disposed is he, as a rule, to make allowance for the natural faults and failings of little children. It behoves you, therefore, if still young, to make a special effort to understand the thoughts and feelings of children, that you may sympathise with them in their difficulties and adapt your treatment to the demands of their nature.

You must bear in mind that the field in which you labour comprises the hearts and minds of children, and that success in cultivating that field is unattainable without a knowledge of its nature. No workman can succeed with his task unless he is well acquainted with the material in which he works. He must know its properties before he can make it serve his purpose. Wrought-iron and cast-iron cannot be dealt with alike. If the worker in metal must know the nature of his material, so, it is evident, must the worker in human hearts and minds. It is truly said that we can only rule nature by obeying her; if we want her to do us any service we must conform to her laws. In the same way, it is essential to success in dealing with children that we should thoroughly understand their nature and conform to the working of its laws. We must not form our plans and settle our methods regardless of the powers and preferences of our pupils, but take these into account in shaping our course.

And what are the common traits of childhood most conspicuous in the class-room? (1) A little child cannot sit still long together. Nature prompts the child, for the healthy development of his body, to be constantly on the move. Remembering this fact, you will be less disposed to be cross with a restless child, and you will give occasional drill during a lesson, and provide for a change of posture and position in changing from one lesson to the next. (2) Closely allied to the proverbial restlessness of children is their love of activity. They delight in always doing something, and especially in imitating grown-up people. Instead then of requiring your children to sit still and listen to you, except for a short time, do all you can to occupy their fingers in some suitable occupation, give scope for the exercise of their imitative powers, and let them be co-workers with you in all you attempt to teach, answering your questions and suggesting how things might be done. (3) A little child, also, takes great pleasure in acting with others. Hence the younger the children under your care, the more needful it is to give plenty of opportunities for concerted action, as in drill and singing, with simultaneous exercises and repetitions at frequent intervals.

2. A Child's Mental Powers.—Further, we cannot adapt our teaching and treatment to children without knowing which of their mental powers are most active, and which are weak or comparatively dormant. A child's power of attention is certainly feeble. He is unable to fix his attention long on the same train of thought. His nature seeks relief in change of employment, and his attention is easily distracted by surrounding sights and sounds. With every one, indeed, the power of attention has its limits, and in the case of young or uneducated persons these limits are soon reached. We must, then, in dealing with little children, neither expect prolonged attention nor try to enforce it. Let us follow the leading of nature, and be content with their learning a little at a time, not keeping them long on the same lesson unless it admits of great variety of treatment, and helping them to concentrate their attention by removing all counter attractions.

Children give a clear indication of their powers by the degree of pleasure they take in exercising them. Appeal to a young child's reasoning power and he will be dull and irresponsive. He has no interest in the proof of any proposition. To him "seeing is believing." Set before him something that he can see and handle, and he will take a keen delight in learning all about it. It is obvious, then, we must teach little children as much as possible by objects, models, pictures, and drawings; we must help them to gain knowledge, as far as practicable, by the direct use of their senses, especially sight and touch.

3. Characteristics of a Child's Moral Nature.—Lastly, in our training of children we must be guided by the characteristics of their moral nature. (1) Children are very susceptible to kindness and affection. Their hearts and consciences are easily touched by one who has gained their love by his own. (2) They love to stand well with any one whom they regard as superior to themselves. If the teacher has gained the respect, not to say the admiration, of his scholars, he has a powerful instrument at his command in their desire for his approbation.

Among the common characteristics, then, of childhood which seem to me most noticeable in school life are the following: (1) restlessness and love of change; (2) desire to be always doing; (3) pleasure in acting with others; (4) inability to fix attention for long; (5) readiness to learn by direct observation; (6) susceptibility to kindness and affection; (7) love of approbation.

4. Adaptation required.—As the child grows in years these characteristics gradually undergo changes, and the teacher must learn to adapt himself and his methods thereto. Every healthy boy (or girl) retains the love of activity and his pleasure in learning by direct observation, but he becomes less restless under instruction, better able to fix his attention, more disposed to use his reasoning faculty and to learn apart from others. As the child advances, therefore, you will call upon him for more independent individual exertion, and make less use of simultaneous repetition and collective teaching. You will make a growing demand on his attention, fully equal at all times to his power of rendering it; and you will not only appeal more and more to his reasoning faculty in teaching, but also in the exercise of discipline.

HOW TO GAIN OBEDIENCE.

1. Nature of True Obedience.—A teacher is of little use in school until he is able to secure obedience. For obedience to be worthy of the name, it must be prompt and cheerful. The object of a good teacher is not merely to get a thing done, but done in the right spirit. He is never satisfied with his discipline, however unhesitating the obedience paid to his orders, unless paid in a willing spirit. And the reason is, he wants his children not only to behave properly but to do so from right motives, his great object being to form character.

2. A Young Teacher's Difficulties.—How then, says the young teacher, shall I set to work to get the children to obey me in the right spirit? The ability to gain the ready obedience of children depends partly on the teacher's personal presence and character, partly on his skill in teaching and experience in governing. You must, therefore, expect to find, in the early part of your career, many difficulties that will gradually disappear as you gain more weight from age and experience, and more facility in handling a class from greater proficiency in teaching. There is usually a painful period, which each teacher has to pass through, whilst learning to govern his class. And it is the duty of the Head Teacher to help him over that unpleasant time and to minimise its difficulties.

3. Create a Friendly Feeling.—Much, however, rests with the young teacher himself. Much depends on his putting himself on a friendly footing with his class, and on getting the children to take a pleasure in their lessons. Do all you can to win their kindly feeling and affection, and then, if your manner is bright and cheerful, and your instruction clear and interesting, you will find, as a rule, that they will gladly conform to your wishes. But remember that the only way to make them feel friendly to you is to be a real friend to them yourself; the only way to win their love is first to bestow on them your own. And this will come quite easily, if you have a real desire to work for their good. No one can spend much thought and trouble upon others without gaining an interest in their welfare and a growing desire to benefit them. And with every benefit conferred, the friendly feeling grows.

4. No Favouritism.—In putting yourself on friendly relations with your class beware of favouritism. It is so much more pleasant to treat the amiable and well-disposed, and those who are agreeable in appearance and manner, in a friendly spirit than the rough and uncouth, the ill-tempered and ill-mannered, that a young teacher is tempted to show a personal preference for the former to the neglect of the latter. However natural it may be to feel this preference, beware of showing it unduly in your general bearing and countenance. Anything akin to partiality and exclusiveness in dealing with your class is fatal to success in winning a ready obedience. The less attractive the children, the less their power to draw others towards them, the more necessary it is for the teacher to put forth his own attractive force in drawing such children to himself. If a child is naturally sullen and gloomy, so much the more needful is it that sunshine from the teacher's face should fall on his. The great thing, however, is to deal out equal justice all round in apportioning praise and blame, rewards and punishments. Use the same rod in measuring shortcomings and the same balance in weighing offences. Justice is the very salt of school discipline.

5. Shun Sarcasm.—Again, if you would win the hearts of the children so as to gain their ready obedience, you must be careful not to wound their feelings. Clever young teachers are prone to say smart things at the expense of some unfortunate child, who is made the object of an ill-natured laugh from his class-mates. The inexperienced teacher may take the children's laugh as a favourable sign, but he will soon have occasion to learn that in their secret hearts the fear of ridicule usurps the place of trustful confidence. Smart sayings, you must remember, cause a smart and leave a sting behind; a little playful banter, however, sometimes serves as a useful fillip, but it is an instrument of discipline which few young teachers can employ successfully.

6. Not too much Fault-finding.—Another common fault in the discipline of the young teacher is excessive fault-finding, a fault to which many earnest, conscientious teachers are peculiarly liable. If I may say so without offence, it is a fault of which young women especially should beware. They do well to set before their class a high standard of duty, but they must remember that right-doing is, to a great extent, a matter of habit, and that habits can only be formed gradually. They must take human nature as it is, and try patiently to make the best of it. They must expect many faults and follies, and not worry themselves because things go crooked, and the children seem perverse.. It is wise to aim at perfection but foolish to expect it.

To hit the happy mean in the treatment of little faults and delinquencies can only come by instinctive feeling or as the result of careful observation, but what all can do is to avoid the *spirit* of fault-finding. Let the children see that you derive no satisfaction in catching them tripping, that you take a real delight in finding things to approve in them, that you are more ready to praise than to blame. But do not forget that one can be too lavish of praise, that it is easy to surfeit the children with words of commendation and to render such words meaningless and valueless. Praise and blame are efficient instruments in the hands of a judicious teacher for securing the obedience of children, but they must be used sparingly and only when deserved.

7. Summary.—There are many other rules applicable to the management of children, but you will do well in your early efforts at securing their obedience to attend especially to these points: strive to put yourself as soon as possible on a friendly footing with your class; avoid favouritism, acting at all times with strict justice; shun sarcasm and ridicule, and mete out praise and blame with an even, frugal hand; expect numerous little faults and shortcomings and regard their correction as a part of the ordinary day's work without needless worry and distress.

HOW TO KEEP A CLASS ORDERLY AND ATTENTIVE.

1. Need of Vigilance.—A quick observant eye is one of the marks of a good teacher. Some who are excellent students fail as teachers because they have the inward look instead of the outward. They seem, while teaching, to be reading the tablets of their own minds instead of watching the effect which their words have upon the minds of their scholars. But the skilful teacher looks straight into the faces of those addressed, and by a number of little signs interprets their thoughts and feelings. He can see at a glance whether he has excited their interest, and can mark the first symptom of weariness, the first moment when their attention begins to flag. He can tell whether he has succeeded in making his meaning plain, whether the children are engaged in active thought, or are merely passive listeners.

Form then the habit of attentively watching the faces of your pupils, mark the play of light and shade on their countenances, and learn by experience how to interpret the first signs of weariness, loss of interest, or flagging attention. To leave yourself free to watch the effect of your teaching by reading the faces of your scholars, you must be conversant with the subject you teach, and well prepare each lesson you give.

2. Need of Tact.—With vigilance in detecting the effect of your instruction, must be combined a ready tact in accommodating yourself to the condition of things before you. The children's look of bewilderment will at once suggest to the tactful teacher that a pause must be made and steps taken to make his meaning clear. The look of fatigue will at once suggest some change by which the strain may be removed. It is useless for the observant eye to note the signs that betoken the state of the children's thoughts and feelings, unless there is sufficient tact to act upon the information. Vigilance and tact must go hand-in-hand, and as a rule they are found together. By the former you read the signals which the young learners are always unconsciously making, by the latter you at once adjust your mode of procedure to their requirements.

The teacher who is both vigilant and tactful keeps his hand on the pulse of the class, at once detects any symptoms betraying weariness, or listlessness, indifference and the like, and before this state of feeling has had time to grow he applies the remedy. He stops short and questions on what he has taught, or he illustrates what he has been saying by a drawing on the blackboard, or he gives a little drill, or in some other way awakens fresh animation and interest.

3. Discipline of the Eye.—If vigilance and tact are needed in giving instruction, they are still more urgently wanted in maintaining discipline. It is astonishing how much can be effected in the management of a class by the eye of the teacher. Between the able teacher and his class there is a constant communication carried on by the silent-speaking eye. Like an external conscience it is present—and there is no escaping from it—to remind, to reprove, to encourage, to stimulate. And it deals with the children individually. It carries its message surely, silently, even secretly, to each individual concerned, without a moment's interruption of the lesson, with the rapidity of the electric telegraph, and with at least the plainness of the spoken word.

By means of the warning eye the teacher can deal with many faults without calling public attention to the offenders, and thus check their wrong-doing without injury to their self-respect. And above all, it enables him to deal effectually with the beginnings of inattention or disorder. "No leak ever broke up a dyke more certainly than trifles passed over break up the order of a class" (Thring). Nothing is more indispensable to good discipline than the ability to mark the first symptoms of weariness in well-doing; nothing is more characteristic of the good disciplinarian than his habitual alertness in the detection of the first signs of disorder. Such signs are as the sparks which indicate the beginning of a fire and which, if attended to at once, are easily extinguished. And the best way in most cases of quenching the sparks of disorder, when the teacher has once established his authority, is by a warning look, especially when accompanied by a significant but slight change in the tone of voice.

Watch then with a keen eye the beginnings of inattention or disorder, and extinguish the sparks of misconduct before they have had time to spread and do mischief. And to enable this to be done, let the children and their teacher sit or stand face to face, and within easy range of each other's observation, remembering that distance tends to diminish, if not the teacher's power of vision, yet certainly the restraining power of the eye. The teacher must not only be present but his presence must be felt.

4. Antidote to Disorder.—I have left till last what I regard as the great antidote to inattention and disorder, and that is *constant employment.* "Take care," said an old schoolmaster, a hundred years ago, "that your pupils have at all times something useful to do and a motive for doing it." Give your pupils nothing to do but listen, while you talk, and their attention will inevitably soon flag, and they will be disposed to find amusement for themselves. But give them an active share in the work, take them into partnership with you, and you will soon find that they take an interest in the business. And interest in their work necessarily carries with it both attention and order.

LEADING PRINCIPLES OF TEACHING.

Many and various are the opinions held respecting the best method of teaching any particular subject. The fact is there are usually many ways of getting to the top of a hill, many ways of reaching some desired end, and it is unwise for all teachers to follow the same beaten track. As on the one hand, nothing is more likely to conduce to a dull mechanical style of teaching than sheep-like following in a marked-out track; so on the other hand, nothing is more likely to promote freshness and vividness of style and to give perennial interest in teaching than the exercise of the teacher's ingenuity in carving out his own course, in engineering his own road.

Do not listen for a moment to persons who would have you believe that there is in teaching any subject some one particular method that is far superior to all others. We are not all built alike, we are not all able to do our best work in the same way. Each teacher must be left free, to a certain extent, to devise his own methods, to go his own gait. But only within certain limits. There are well-ascertained principles on which all experienced teachers are agreed, and to which the young teacher must conform in shaping his own particular course. These principles will now be discussed.

FROM THINGS TO IDEAS.

1. Limited Power of Words.—Words have but a limited power of conveying ideas. The lecturer addresses the same words to all in his audience, but his words do not convey exactly the same message to all who hear them. To some they will convey a much larger number of clear and correct ideas than to others. The fact is words are only the symbols of ideas, and they can only be rightly interpreted, or changed into the right ideas, by means of ideas already in the mind.

We can only form ideas of things we have not seen by means of the ideas of things we have seen. So that our first ideas when we are little children, are formed from what we actually see, hear and feel. No amount of description could give an idea of sound to a child born deaf, and no idea of colour to one born blind. Our senses are our first teachers. All our knowledge comes to us in the first place through our senses—sight, hearing, touch, smell, and taste.

2. Learning at Firsthand.—The ideas thus formed by observation and the actual experience of things enable us to profit by the observation and experience of others. What we have seen and examined for ourselves enables us to understand what we are told by others. The greater the number and variety of the ideas formed, at firsthand, by our own observation and experience, the easier we shall find it to form true and correct ideas from what we read and hear spoken. The clearer our ideas of things we have actually seen and examined, the more vivid and correct will be our ideas of things we have not seen with our own eyes but only had described to us.

The practical inference is this: *Let a child learn as much as possible at firsthand.* In early life, especially, children should have their senses well exercised, and learn all they can from objects, specimens, models, pictures and drawings. Whilst young we ought to learn all we can by direct observation and experiment. The ideas we thus acquire in childhood form our stock-in-trade or mental capital, the raw material of thought for our minds afterwards to work upon.

Things, not words merely, must form the medium of instruction, especially in the case of young children.

CHIEF POINTS.—

1. Words can only be changed into ideas by means of ideas already in the mind.
2. Our first ideas are derived directly from things by means of the senses.
3. The clearer and more numerous the ideas thus formed, at firsthand, the better able we shall be to understand what we read and hear. Hence
4. "Let a child learn as much as possible at firsthand."
5. The ideas thus acquired form the raw material of thought for the mind afterwards to work upon.

FROM IDEAS TO WORDS.

1. When to Introduce New Terms.—Words apart from things are of little value, as we have just seen, in teaching young children. At the same time words have an important part to play. When a child has examined a thing and learnt something about it, he should be taught to express the idea he has gained in suitable language. Similarly, when a child, in his early lessons in geography, has formed an idea of some natural feature in the school district, he should be taught the geographical term applied to it.

The idea we wish to impart should first be formed from the thing itself, when possible, and then the idea thus formed should be labelled, as it were, with its name or verbal equivalent. In this way the idea will be fixed on the mind and be recallable at pleasure. The idea and its verbal expression are to each other as soul and body. Unless bodied forth in words, ideas would elude our grasp and flit away as fast as formed. But by the help of words we are able to keep an idea before the mind, thoroughly examine it, compare it with other ideas, and draw conclusions from it.

The teacher will therefore supply the children with new terms as often as they are needed to give form and substance to new ideas. No single lesson should have many new terms in it, but in every lesson it is well to add two or three new words to the children's vocabulary. Only be sure to withhold the new term until the corresponding idea has been communicated. Thus it would be inverting the right order of teaching to introduce the term "peninsula" to a class of young children and then to explain its meaning. The proper course is to set before them a model of a peninsula, and let them form an idea of the thing itself from what they see. Then give them the term by which that thing is known.

2. Verbal Knowledge Inadequate.—It is highly important for every teacher to distinguish clearly between real knowledge and merely verbal knowledge. Children are very apt at picking up words and phrases and rightly using them without really grasping their meaning. And young teachers are very liable to be deceived as to the amount of real knowledge which lies at the back of these words in the children's minds. If not on your guard you are likely to give them credit for knowing more than they really do. Ability to repeat a form of words about a thing is no evidence that the thing itself is understood. The only safe way, in teaching little children, is to make, whenever possible, the thing itself, or some visible representation of it, the basis of your instruction.

A good teacher will be more solicitous to get his pupils to form right ideas than to repeat a right form of words. If he wishes the class to learn anything by heart he will take care that they first understand it. He will see that the mind has laid hold of the ideas before trying to fix the corresponding words on the memory. It is a sure sign of bad teaching when we hear children glibly repeating rules and definitions without knowing their meaning. Words, remember, are but the shells of knowledge, the ideas they embody are the kernel. Be more solicitous about the kernel than the shell.

3. Function of Words.—But avoid extremes. Although words are valueless without ideas, new words are most needful for preserving new ideas, for giving them a definite form and value, and for rendering them communicable. Before an idea has found its proper verbal equivalent it is like gold in the form of bullion, a shapeless mass, but on finding expression in words, it assumes a definite form and value, and becomes current coin. Whilst being careful to supply our scholars with new terms corresponding with the new ideas they have formed, we must guard against their using terms and verbal expressions—which are the mere semblance of knowledge—whilst lacking the ideas that alone can render them of any value. Or to put this in the form of a short rule. *See that the pupil's tongue does not outrun his mind.* Let not his words outpace his ideas. The right order in teaching is invariably this—THINGS, IDEAS, TERMS.

CHIEF POINTS.—

1. New terms and verbal forms—like rules and definitions—should be kept back until the corresponding ideas have been communicated.
2. See that your pupil's knowledge is *real* not merely *verbal.* Children are adepts in picking up and using words and phrases without really understanding them.
3. Words are but the shells of knowledge, the ideas they embody are the kernel. Be more solicitous about the kernel than the shell.
4. "See that the pupil's tongue does not outrun his mind." The right order is—*things*, *ideas*, *terms.*

FROM THE KNOWN TO THE UNKNOWN.

What a child knows should be made the starting-point and basis of what we wish him to learn. In teaching new facts or ideas we should always try to link them on to some kindred facts or ideas already in the mind. In this way our pupils' knowledge will grow and form a living whole. When ideas are thus associated in the mind they are better understood and more easily remembered. When one idea occurs to the mind it is ready to bring with it a train of ideas which have been linked to it and to each other. But when facts are taught without reference to previous knowledge, they are apt to form so much lumber in the mind, and being unconnected with what is already known soon drop out and are forgotten.

Thus learning does not consist in a series of isolated efforts, or in storing up a number of unconnected ideas, but in linking on new facts and ideas to others already well known. It is the business of the teacher to do his utmost to help this linking process; and in considering what the pupils already know he will not forget that fund of varied knowledge which they have acquired informally before coming to school. Young children are continually picking up crumbs of knowledge as they run about. And if the teacher knows his business he will try to connect the knowledge children bring with them to the schoolroom with the knowledge they are to acquire when there. He will by no means regard their minds on their first coming to school as so many sheets of blank paper, and he will endeavour to make full use of what is written on them. His aim, in fact, will be both to connect new knowledge with old, and to employ the latter as a means of imparting the former, knowing that what is familiar to the children may become the means of illustrating and making clear what he wishes them to learn.

It is, then, a standing law in teaching *to proceed from the known to the unknown*. And to carry out this law these two rules must be observed: (1) Make old knowledge the groundwork of new, taking care to link the ideas you wish to impart to some already in the mind. (2) Use the pupil's ideas of things familiar to him as a means of imparting ideas of things new and strange to him. For example, in giving the first lesson in Multiplication, you should base your instruction on the children's knowledge of Addition, and in giving a lesson on the Tiger you should make a liberal use of their knowledge of the Cat.

It will be seen from this that in teaching there should be a constant comparison between what you desire the children to learn and what they already know. By this means ideas are associated or linked together. And when this is the case, as before remarked, they will be better understood and more easily remembered; for they will throw light on each other and make a stronger impression on the mind.

CHIEF POINTS.—

1. New ideas should be linked on to old ones. Ideas thus associated are better understood and more easily remembered.
2. "Proceed from the known to the unknown," that is,
   - (*a*) Make old knowledge the basis of new.
   - (*b*) Use what is familiar as the means of teaching what is new and strange.
3. In teaching there should be constant comparison between old knowledge and new.

FROM THE CONCRETE TO THE ABSTRACT.

We have already discussed the principle of proceeding from the known to the unknown. There is another principle, akin to this, which directs us *to proceed from the concrete to the abstract*. There are two distinct ways of applying this principle, corresponding to the twofold use of the word "concrete," which relates (1) to real things, (2) to individual facts, examples, etc. By "real things," I mean such as may be perceived by the senses.

First, this law of beginning with the concrete requires us, when the lesson is on a real thing, to begin with an account of the thing itself before proceeding to any causes or reasons respecting it. If your lesson, for instance, is on *Volcanoes*, try first of all to give an adequate idea of the thing itself by means of a vivid description with the aid of a model or some pictorial representation (picture, drawing, or diagram). Time enough when the learner has a fair idea of what a volcano is to discuss the causes to which its existence is due. "What" should always precede "How" or "Why."

Secondly, this law of proceeding from the concrete to the abstract directs us, when the case admits, to proceed from particular examples to some general conclusion, such as a rule or definition or some other abstract statement. This process is called *Induction*, and consists in proceeding from the particular to the general, from particular facts, examples or instances to some general conclusion. Let us take one or two examples in illustration.

In giving a lesson on the *Verb* to little children, we should begin by writing with their aid a few easy sentences; then we should help the young learners by means of these sentences to form an idea of a verb, and lastly to embody the same in a simple definition. Similarly, in the first lesson on *Simple Interest* we should begin with easy examples, and lead the pupils to discover for themselves the way to proceed in each case, and lastly how to form a rule by which all similar examples might be worked. We may sum this up by saying that rules and definitions are to be taught *inductively*.

It is well to remark that the order in a text-book is often just the reverse of that to be followed in teaching. Thus in a text-book on Grammar the definitions precede the illustrative examples, whereas in teaching the examples should come first and form the groundwork of the instruction. So in a text-book on Arithmetic the rule is first stated and then an example is worked out according to the rule, but in teaching the reverse of this is the right order. Again, in Euclid the general enunciation comes first and then the particular enunciation in connection with the figure. But in teaching the particular should come first. The learner seldom understands the general enunciation before he has gone through the particular. In teaching begin with what comes easiest, first the concrete then the abstract, first the particular then the general.

CHIEF POINTS.—

1. "Begin with the concrete and lead on to the abstract."
2. In lessons on real things "What" should precede "How" or "Why."
3. When the case admits, proceed from particular examples to some general conclusion. This process is called *Induction.*
4. Rules and definitions are to be taught *inductively.*
5. The order in text-books is often the reverse of the order to be followed in teaching.

ACTION, THE GREAT TEACHER.

We have already seen that instruction should be given as far as practicable in a concrete form, and that the pupil should get his ideas when possible at firsthand, that is, by direct observation and experience. The great thing, we have seen, is for the young learner to acquire a fund of clear and correct ideas by the exercise of his own senses; and for this purpose it is essential that he should be taught to observe *accurately.*

1. Value of Reproduction.—Now the most effectual way of securing this result is to get the children to reproduce in some form what is submitted to their inspection. If we want them to take off an accurate impression on their minds of some particular object, its form and parts and the relation between them, there is nothing equal to the attempt on their part to make a representation of it by drawing or modelling. Is it an oak-leaf, for example, you wish them to observe accurately so as to be able to identify such a leaf at any future time? Then the most certain way of success is to get them to make a drawing of it, for the attempt to do this involves a very careful scrutiny of the object. Do you wish a class, when learning to read, to distinguish between b, d, and p? Then the surest way of getting this done is to let them imitate in writing the printed letters. Or, it may be, you wish your pupils to remember the towns on a certain river and the order in which they come. If so, not only show them a map of the river, not only make a drawing of it yourself in front of the class, but let them copy your drawing.

The same principle holds good throughout the work of a school. The eye and hand training begun in the Infant School should be continued throughout the child's school course. In the Kindergarten system care is taken to exercise both hand and eye. Through the eye the little child receives certain impressions of things, by the hand it endeavours to reproduce what it sees, such mechanical aids being given as the case requires. There is much scope for practice of this kind in schools for older children. As far as practicable the pupils should reproduce what they see done by the teacher. Suppose the class is receiving their first lesson on the Square Measure Table. Every good teacher would draw diagrams to illustrate the different measures, and would probably cut out accurately in paper a square inch, a square foot, and a square yard, and show how to ascertain their relative size. It is desirable, however, to go a step beyond this. A teacher should not be satisfied with doing these things himself, leaving the children to watch, and tell what they observe; but he should set the children to draw similar diagrams, and, it may be, to make similar paper patterns at home.

2. Doing worth more than seeing done.—The same principle applies to all lessons in science. Much may be learnt by watching the teacher's experiments, but the only thorough way of studying scientific subjects is by performing one's own experiments. There is much knowledge that can only come in through the finger-tips. There is much knowledge that can only be gained by trial and failure followed by revised attempts until the difficulty is overcome and the point in question set at rest.

We recognise the effectiveness of this method of making the pupils actually do a thing, instead of merely hearing or seeing it done, in our mode of correcting errors. Thus in a reading lesson we do not merely correct a word misread, but we require the reader to repeat the corrected word. So also in a dictation exercise we do not merely mark the mis-spelt words and say how they should be spelt, but we require the child to rewrite such words a certain number of times.

3. How a thing is best learnt.—In fact it holds universally true that *we learn a thing best by what we do.* Even in teaching such an abstract subject as Grammar a little explanation with plenty of practice in writing exercises is generally the best course to adopt. Instead of making our teaching tedious by reiterated explanations let us set the children to work and their ideas will clarify in the process. It is by working examples and problems and by actual practice in analysing and parsing that children best succeed in learning Grammar and Arithmetic. You may therefore take it as a standing rule in teaching: *Explain little, exercise much.*

The same principle holds good in respect to conduct. Instead of scolding and being worried when a child has omitted some duty or performed it negligently, require him to supply the omission or to amend the faulty action. Has he on entering the room left the door open? Send him back to shut it. Has he come to school with unwashen face? Require him at once, to wash it. Has he only half done his home-lesson? Let him stay in and complete it. Certain individuals will need more stringent treatment, but with the great majority this method persistently carried out will suffice. Both in teaching and managing children, the truth stands—"Action is the great teacher."

CHIEF POINTS.—

1. The pupil should be taught to observe *accurately*.
2. Reproduction in some form is the best way of ensuring accurate observation as it involves a careful scrutiny of the object.
3. The pupil may learn much by watching the teacher engaged in drawing, performing experiments, etc., but still more when he actually does what he sees done.
4. "We learn best by what we do." Therefore—
   - (*a*) Set your children to work, when practicable, with their own fingers.
   - (*b*) Explain little, exercise much.
   - (*c*) Errors are not merely to be mentioned or marked by the teacher but actually corrected by the children.
5. Both in teaching and managing children the same truth holds good—"Action is the Great Teacher."

VALUE OF SELF-EFFORT IN LEARNING.

1. The Pumping Process.—It is now universally accepted as one of the first principles in the art of teaching that "a pupil is educated not by what other people do for him, but by what he is led to do for himself." The old system too often consisted in pouring out knowledge as if it were the teacher's great aim to store the memory with facts and words and with the results of other men's thinking. The whole operation, when in unskilful hands, was as futile as pumping on a kettle with the lid on.

If we really wanted to pump in knowledge, our first aim would be to get the lid off—to secure the pupil's willing co-operation. But the whole pumping system is at fault. We want our pupils to draw their own water, to acquire knowledge by their own efforts mainly. We want to cultivate in them the desire and the power to gain knowledge for themselves, and to carry on their own education when no longer at school. And this we shall best succeed in doing by throwing them, to a great extent, on their own resources, and inducing them to learn all they possibly can by setting their own wits to work.

2. The Learner's Part.—All real progress in learning is made mainly by self-effort. The process of making knowledge really one's own is a kind of mental digestion, which from the nature of things must be performed by the learner himself. The teacher can prepare suitable mental food, he can put it within his pupil's reach, he can do something to create an appetite for it, but after all it is only by the action of the pupil himself that it enters into the texture of his mind. Both teacher and pupil have their part to play, but it is clear what the pupil does, not what the teacher does, is the essential part of the process.

I may now state, as the practical outcome of these considerations, what I consider the cardinal rule in teaching: *Never do for a pupil what he may with a fair effort learn to do for himself.* The teacher that acts on this maxim puts the learner in the position of an explorer, and encourages him to discover all he can for himself. But there is a limit to his powers of discovery, and it is a great thing for a teacher to know when he ought to tell and when the learner ought to find out by his own efforts. When it is a question of mastering some difficulty within easy range of the pupil's power, then no time is thrown away that may be needed for him to gain the victory. "Let the boy win his spurs" is as applicable in the schoolroom as on the field of Crecy.

3. Limit to Self-Effort.—In determining what should be told and what not, consider whether you are dealing with facts or reasons. Reasons must be left, under the teacher's guidance, to the learner's own wits. Facts must sometimes be told and sometimes not. Such facts as are beyond the pupil's ken must be told straight off. Such facts as can be easily learned by observation should be left for the learner to acquire by the use of his senses. But it often happens that when the method of learning by observation is possible, it is not practicable. A visit to the fields may enable the children to ascertain a fact you wish them to know, but the fact is wanted at once and the visit would cost half a day. In this matter common sense must be your guide. What is best in theory is not always best in practice.

The same principle of self-help holds good in much of the routine work of a school. When a child in reading stumbles at a word, it is generally best to help him to master it by his own efforts. So in a writing-lesson, it is better to get the child to criticise his own writing by comparing it with the copy than at once to tell him what is wrong. The same remark applies to exercises in drawing. Self-correction is generally best.

4. Time well Spent.—Some teachers fail to make much use of this principle on account of the time occupied in learning a little. But they should remember that what is mastered by self-effort is sure to be understood and most likely to be remembered. Knowledge, like money, is hoarded with a care proportional to the pains taken in acquiring it. "Quickly come, quickly go" applies to learning as well as to money.

Moreover, no one has conquered a difficulty by his own exertions without being better disposed and better able to attack other difficulties. No one has been wont to learn by depending mainly on himself without gaining patience under discouragement and perseverance under failure. A boy or girl thus trained at school will in business be likely to prove helpful, self-reliant, and resourceful.

CHIEF POINTS.—

1. "Never do for a pupil what he may with a fair effort learn to do for himself."
2. The teacher's chief aim is to train his pupils to think for themselves.
3. All real progress in learning is made by self-effort. Learning is a sort of mental digestion, and this can only be performed by the pupil himself.

CHIEF POINTS.—

4. The teacher's success should be measured by the mental activity and independent effort of his scholars.
5. Reasons are to be found out by the learner. Facts sometimes to be told and sometimes not. Common sense must decide.
6. In dealing with errors get the children as far as possible to correct themselves.

GRADUATION OR SHORT STEPS.

Every lesson which is not too simple for a class is sure to present certain difficulties to the learners. As a rule, indeed, every lesson given to little children teems with difficulties though the young teacher is often quite unconscious of the fact. It is obvious that the way to deal with such difficulties is to take one at a time. This demands careful graduation, or the division of the lesson into a series of steps, each naturally leading to the next. The younger the children the more minute should be the graduation; in other words, the more numerous should be the steps, for of course the more numerous the steps the shorter they will be.

Short easy steps should be the rule in teaching little children. It is a rule that needs to be branded upon the mind of the young teacher. The necessity for mincing the knowledge offered to young children seldom strikes the inexperienced teacher with due force. Listen to a novice in the art of teaching, and you will find that he attempts to deal with the subject in a wholesale fashion instead of attacking it in detail. He has not formed the habit of resolving the subject-matter of his lesson into its prime elements, and of arranging them in regular sequence, beginning with what comes easiest.

To become a good teacher, a person must form the habit of analysing the process in his own mind by which he has arrived at a certain result, and accustom himself to review the different steps by which he has himself acquired the power of doing certain things. If you would learn to teach well you must often reflect on your own mind's history, you must try to retain a vivid recollection of the thoughts and feelings of your own childhood, you must look back on the road by which you have travelled and recall the rough places on the way.

We all know the story of the father who tried to make a deep impression on his sons of the truth, that "Union is strength," by means of a bundle of sticks which they failed to break when taken together. As the way to succeed in snapping the fagot in two was to unbind it and break the sticks one by one, so the way to enable children to overcome difficulties in their lessons is to untie the bundle in which they are bound together, and to present them one by one for the young learners to take in hand and master, if possible, by their own exertions.

The great thing, then, to be aimed at is so to arrange your lessons that the children have never to cope with more than one difficulty at a time. This implies, as I said, careful graduation. If, for instance, you are giving a set of lessons on writing the letters, you will not take them alphabetically but in the order of difficulty, proceeding from the simple to the complex. And for this purpose you will classify the letters according to their elements, and introduce them in such an order as to have, if possible, only one new element in each lesson. Similarly, in teaching a new rule in arithmetic, you will carefully resolve the whole process into a number of stages, each to be taken in a separate lesson, and at each stage you will proceed by a number of short easy steps.

It will be found in practice that in order to carry out the rule of presenting only one difficulty at a time, it is necessary to begin with what comes easiest and to advance step by step from the more simple to the more complex. When this is done, the mastery of one difficulty forms a stepping-stone to the mastery of the next. All this, I need not say, demands diligent preparation on the teacher's part. Schemes of work must be carefully drawn up, and notes of lessons written, if only with the special object of determining the order in which the subject should be treated in accordance with the rule—*one difficulty at a time, beginning with the least.*

CHIEF POINTS.—

1. Arrange your instruction so as to present but one difficulty at a time, beginning with the least and advancing, step by step, from the more simple to the more complex.
2. This requires careful graduation, that is, the division of the work to be done, or the lesson to be given, into a number of short easy steps, each naturally leading to the next.
3. And this, again, demands diligent preparation on the teacher's part, both in drawing up schemes of work and in writing notes of lessons.

THOROUGHNESS OR SURE STEPS.

1. Instruction a sort of Building.—For success in mastering difficulties in learning, as we have seen, graduation is indispensable, but hardly less so is thoroughness of treatment. *Our steps in teaching should not only be short but sure.* Time is an important factor in the work of instruction, which—as the derivation of the word suggests—is a process similar to building. We know that a tower hastily erected is never quite safe, that time ought to be allowed for the mortar to dry and the work to settle. So in teaching time must be given for the children to surmount one difficulty before proceeding to the next, for one idea to sink in before another claims attention, or the mental structure run up in haste will be insecure. There can be no true progress in learning unless the groundwork is sound and solid.

To ensure this soundness and solidity of structure the teacher, like the builder, must often test his work. Watch masons building a wall, and you will see them at intervals putting their work to the proof by applying the plumb-line.

Taking a leaf out of their book you also will apply the plumbline at intervals, and this you will do by stopping at convenient points in the course of the lesson, and questioning the class to see that they have rightly understood what you have just tried to teach them.

2. Need of a Good Foundation.—Thoroughness of treatment is especially required in teaching the first elements of any subject, for unless perfectly mastered they cannot serve as a good foundation on which to build. The time spent in accomplishing this may seem to the inexperienced teacher out of proportion to the amount learnt, but the subsequent results will more than justify the outlay. Remember that in learning, as in most things, "it is the first step that costs"; it is the first step in any new branch of knowledge that tasks the powers of the learner, it is the first acquaintance with the ideas of a new subject that is so difficult to make. The early lessons in any subject demand the greatest care and skill. The Head Teacher who understands his business will see that the beginners in any subject, however simple, receive the best teaching at his command; for upon the character of these first lessons will depend the attitude of the learners towards the new subject. Obscure blundering teaching, when the children are on the threshold of any subject, will prejudice them against the study of it, making them feel that it is devoid of interest or beyond the reach of their powers.

3. Reasons for Advancing Slowly.—Real progress in learning depends largely upon thoroughness. As money makes money, as success generates success, so knowledge really made one's own has a tendency to gather more around it. Such knowledge forms a centre of light, helping the learner to explore the field of knowledge that lies around. But knowledge that is only partially appropriated affords no such help; it soon fades away and is forgotten. Better, then, to have a little learnt well than much more imperfectly. And here by way of emphasising what I have said, let me give the views of Dr. Fitch on this matter:—

"The best teacher is he who is never afraid of the drudgery of repeating, and going back, and questioning in many different forms; and who is content to move slowly, if only he can make the dullest member of the class move with him. After all, it is by the dull boy that you should measure your own progress in a lesson; not by the quick one. Move with the worst learner, not with the best; and then your pace will be sure, at least, even though it be not very rapid."

Whilst aiming at thoroughness, we must avoid being tedious through wearisome reiteration; but there is probably more danger, in most cases, of losing attention by going too fast, and attempting too much, than by going at a slow and sure step. Every good teacher, however, will vary his pace, in the course of a lesson, by the nature of the ground to be traversed, proceeding comparatively fast when it is smooth and easy.

4. Need of Frequent Revision.—One thing more. Even knowledge that was thoroughly understood at the time it was first acquired can, as a rule, only be retained in permanent possession by being brought again and again before the mind of the learner. Hence the need of repeated revision, of going over old ground until it is quite familiar. As says Jacotot, "*Répétez sans cesse.*" Only in aiming at thoroughness be on your guard against tediousness, and therefore in revising, whether at the time of the lesson or subsequently, it is wise to vary the order or the mode of procedure.

CHIEF POINTS.—

1. For success in mastering difficulties thoroughness is as essential as graduation.
2. To ensure soundness and solidity of workmanship the teacher must often question the class to test the effect of his teaching and to make sure of his ground as he goes.

CHIEF POINTS.—

3. Thoroughness of treatment is especially necessary in teaching the first elements of any subject. "It is the first step that costs."
4. Real progress in learning depends largely upon thoroughness. Learn a thing really well, and it will serve as a centre of light casting its rays over the field of knowledge lying around.
5. Move with the worst learner and then your pace will be sure though slow.
6. To keep knowledge in possession often revise; "*rêpétez sans cesse.*"

INTEREST IN LEARNING.

1. Interest in Learning Indispensable.—To the young teacher the anxious question often occurs, "How shall I get my pupils to take an interest in what I attempt to teach? I see that unless my teaching is interesting to them, it will not command their attention nor gain that willing co-operation so essential to success. How then can I best gain the power of being interesting?"

Before answering that question let me emphasise the importance of making our instruction attractive. "With constant, varied, and pleasant employment the intelligence of children develops; without it, it shrivels up." The endeavour to make learning as far as possible pleasurable is one of the marked differences between the teacher of to-day and his predecessors. The modern teacher is convinced that the right method of teaching is that which evokes the liveliest interest of the learners and best conduces to their happiness. "Experience," says Mr. Spencer, "is daily showing with greater clearness that there is always a method to be found productive of interest, even of delight, and it ever turns out that this method tried by every other test is the right one."

It may, however, be doubted if it is always possible to make every part of school-work a source of pleasure. There is in the school-room, as always elsewhere, a certain amount of tread-mill work to be gone through, a certain amount of unpleasant task-work to be done. When, however, as is mostly the case, the desired end may be reached by a pleasant path, you would be foolish not to take it. Not only will the children more willingly travel with you along such a road, and in consequence make more rapid progress therein, but some at least will acquire a love of learning and a desire to pursue the path of knowledge when school-days are done.

To say that it is a good thing to awaken interest and keep it alive in our pupils is to understate the truth; it is not only a good thing, but in teaching it is of all good things the best. No real good can be done without it. Everything else must be sacrificed, if need be, to it. If, for instance, you can only be thorough by being tedious, you had better sacrifice thoroughness, for the present, to the necessity of reviving the flagging interest of your pupils. Thoroughness in teaching is good but interest in learning is still better.

2. How to make our Instruction Interesting.—"How then," says the young teacher, "shall I best succeed in being interesting?" You must take care that you have something to say to your children which is worth their hearing. This means previous preparation and the thorough mastery of your subject. The consciousness of being well equipped for the task will give you confidence, and at the start at least command attention, for the children will, from your look and bearing, become expectant of a good lesson.

You will also bear in mind that the eye is to be attracted if the lesson is to prove interesting. And therefore in preparing the lesson be on the outlook for the means of appealing to the eye in illustration of your teaching. If you would enlist the interest of children you must give them something to look at, or still better something to touch and handle, something to examine with eyes and fingers, something to do.

There is an intimate connection between clearness in teaching and interest in learning. One of the surest ways of making a child dislike the study of any subject is to teach it in such a way as to leave him groping in darkness and floundering about in a quagmire of difficulties. The question, how shall I make my instruction interesting, almost resolves itself into the question, how shall I make it clear and plain. The answer is study the subject until your own ideas are perfectly clear, and in setting it before the class use plain and simple language, call in the aid of visible illustrations, and deal with the difficulties that occur in the way already explained.

The interest which the pupil feels in learning is also much affected by the interest which the teacher feels in teaching. There is, indeed, a reciprocal action most remarkable between the interest which the teacher takes and that which he communicates to his pupils. When a man takes a genuine delight in the subject of his lesson, when his own mind is full of ideas that he has a strong desire to share with others, or when he has devised some new method of making his instruction plain to his pupils, they are almost sure to catch some sparks of his enthusiasm and to be kindled with his spirit. Certain it is, on the other hand, that no teacher who is apathetic, dull and spiritless can succeed in evoking the interest of his unfortunate scholars.

3. A Teacher should be always a Learner.—As the young teacher will one day grow old in the work, suffer me to say that you will cease to interest your scholars, if ever you cease to take an interest in what you teach. And that will certainly be the case unless you take pains, either to get a stock of fresh ideas or to bring the old ideas "up to date," by reviving them in your own mind, re-arranging them, and if need be modifying them in accordance with the results of recent discovery.

If then, you would see your scholars take a keen interest in your instruction, when you are no longer young, you must by renewed study freshen up your old knowledge till it becomes perfectly clear and ready in your own mind, and you must keep up your own interest by continually garnering fresh ideas. When a person ceases to be a learner he ceases to be an efficient teacher. "So long," says Dr. Arnold, "as we humbly learn we may hopefully teach." So long, I would add, as we take pleasure in learning, we may give pleasure in teaching.

CHIEF POINTS.—

1. Unless our teaching is interesting it will fail to win the attention and willing co-operation of our pupils.
2. The right method of teaching is that which evokes the liveliest interest and best conduces to the happiness of the learners.
3. To awaken interest is more important in teaching than anything else. Even thoroughness stands second to interest.
4. To make our instruction interesting we must—
    - (*a*) Have something to say which is worth hearing.
    - (*b*) Make our teaching clear and plain.
    - (*c*) Supply visible illustrations.
    - (*d*) Teach with enthusiasm.
5. To keep up an interest in teaching we must never cease to be learners.

USEFUL MAXIMS.—

1. Let a child learn all he can by direct observation.
2. See that the pupil's tongue does not outrun his mind.
3. Make old knowledge the basis of new.
4. Constantly compare what is new and strange with what is familiar.
5. Begin with the concrete and lead on to the abstract.
6. We learn a thing best by what we *do;* therefore explain little, exercise much.
7. Never do for a pupil what he may with a fair effort learn to do for himself.
8. Our steps in teaching should be both short and sure.

USEFUL MAXIMS.—

9. Deal with one difficulty at a time, beginning with the least.
10. Instruction should be made pleasurable when possible.
11. Often revise old knowledge. "*Répétez sans cesse*" (Jacotot).
12. "So long as we humbly learn we may hopefully teach" (Arnold).
13. "Take care that your pupils have at all times something useful to do and a motive for doing it" (Lancaster).
14. It is wise to aim at perfection but foolish to expect it.
15. So long as we take pleasure in learning, we may give pleasure in teaching.

PREPARATION OF LESSONS.

A man, however experienced in teaching, who prides himself on not requiring to get up a lesson beforehand is not worthy the name of a teacher. However good a man's general power of teaching, it rarely happens, even when he is master of his subject, that he can do his very best without previously considering in what way he can make his instruction plain and interesting to his pupils. And unless a man gives of his best, and in the best way of which he is capable, he has not the spirit of the true teacher.

Let the young teacher, then, make preparation for the next day's work a serious part of his daily duty. If he would retain his self-respect, enjoy his work, and make progress in his art, let him resolve to enter his class-room each morning with a mind well equipped for the task before him. It is not beyond the truth to say that the due preparation of lessons is, as much as anything, the secret of successful teaching and the secret of happiness as a teacher.

NEED OF CAREFUL PREPARATION.

1. Wise Selection of Matter.—The first condition of success in giving a lesson is adequate knowledge of the subject in hand. To select the most suitable matter there must be a good stock to select from. If the mind of the teacher is but scantily furnished he is obliged to offer his whole stock of knowledge without regard to its fitness. He is unable to keep to the rule that directs him "to select such parts as are suitable and either interesting or important."

Besides, if all the knowledge he could get together was suitable for the class, he would be unable to impart it all, however skilful he might be. Much less, we must remember, is conveyed to the mind of the learner than is offered for his acceptance. It used to be said that "every man killed in battle cost his weight in bullets." There is not, we may hope, so much waste as this in trying to shoot the mark when teaching, but undoubtedly a considerable number of the arrows of knowledge fall short or overshoot the target. Hence the need of a good reserve or surplus of knowledge at the teacher's command to enable him to make a good selection, and out of his resources to find enough and to spare for the wants of his pupils. "The power of teaching a little, depends on knowing a great deal, and that thoroughly" (Huxley).

2. **Power of Clear Exposition.**—There is also a close connection between the possession of a good stock of knowledge and the power of setting it clearly before others. It is true that a man who is well versed in his subject may not make due allowance for the ignorance of his pupils, but this rarely happens in the case of a skilled teacher who knows his business. Certainly, the clearer a real teacher's own ideas on a subject, the more capable he is of handling it so as to make it clear to others. A man who is master of his subject is able to present it from different points of view, to meet objections, to remove difficulties, and to elucidate by familiar illustrations.

My own experience—and it has been my lot to hear and criticise some thousands of lessons—entirely bears out what Canon Moseley said long ago on the relation between successful teaching and full knowledge on the part of the teacher. "In all the lessons which I have heard," he says, "the cardinal defect is inadequate knowledge of the subject in hand. If his knowledge of it had covered a wider surface he would have selected matter better adapted to the instruction of children. If he had comprehended it more fully, he would have made it plainer to them. If he had been more familiar with it, he would have spoken more to the point." Purposeless talk arises from shallow and imperfect knowledge. A vague abstract style of teaching is the inevitable consequence of meagre knowledge, such as is obtained from some small book in which the mere outlines are given, in which the information is presented in the unlovely form of a bare skeleton.

3. Ability to Describe Vividly.—No teaching can be good that is not a living thing, it must be instinct with life if not with beauty. To interest our pupils we need a vivid, graphic style of teaching, such as arises from personal knowledge, practical experience, or intimate acquaintance. Listen to a man who in a lesson on geography is describing what he has himself seen, and observe the effect on his listening pupils, and you will see that there is a living interest pervading the whole body. No teacher can always speak from personal knowledge, or what may be called knowledge at firsthand, but he should always endeavour to draw his information as near the fountain-head as possible. Thus in preparing lessons on geography, he should supplement and vivify his information by reading-books of travel, and his lessons in history by reading the lives of great men.

To obtain the knowledge requisite for giving really good lessons careful preparation, it is evident, will be needed. Let us next consider how best to make such preparation.

CHIEF POINTS.—

1. Adequate knowledge is the first condition of success in teaching.
2. Without it no proper selection of matter is possible.
3. There is a close connection between
    (*a*) The possession of a good stock of knowledge and the power of setting it clearly before others.
    (*b*) A vivid graphic style of teaching and a full knowledge of the subject obtained at firsthand.

MODE OF PREPARING LESSONS.

1. Collecting Material.—The kind and amount of preparation required vary considerably. In those lessons which are intended to give practical skill, as in writing and drawing, little or none is wanted. And when the lesson consists in the explanation of some process familiar to the teacher, as in arithmetic and algebra, the only preparation required relates to the best method of making the matter clear to the learners, and the apparatus needed for the purpose. There are, however, certain lessons which can only be properly given by previous study and forethought, both as to matter and method.

The first thing to be done in preparing such a lesson is to settle its aim and purpose. Your first impulse, on this being done, will be to go in search of information in some book at your command. To do this, however, at the outset is unwise, as it leads to the habit of slavishly following others instead of striking out a course for yourself—a habit fatal to freshness and interest in teaching. It is generally better first to ransack one's own mind for ideas on the subject, and afterwards to read in order to gather additional information and to clear up doubtful points. Whilst engaged in your search for interesting matter, you will find it convenient to jot down rough notes of such facts as seem to suit your purpose.

In searching for material for a lesson avoid the use of small text-books in which only the bare outline is given. If your mind is to be furnished with interesting matter you must look for it in books that are written to give pleasure. Above all, shun the use of a book on "Notes of Lessons" as a source of information; such "Notes" may be suggestive in respect to form and arrangement, but they are necessarily meagre and jejune in respect to subject-matter. If you would stimulate your pupils to think, you must give them the result of your own thinking; if you would have your pupils exercise their wits, you must first use your own. Therefore each lesson you give should take its form and substance from the working of your own mind.

2. Writing "Notes of a Lesson"—Having collected material for the lesson, the next thing is to draw up teaching notes, arranged, as a rule, in two parallel columns to indicate "What to teach" and "How to teach it." Begin by selecting and arranging the matter. Make such a selection as seems most interesting and important and within the range both of the children's powers and of the time at your disposal. The selected matter must then be arranged under three or four headings, and again subdivided, so as to show at a glance the various points to be attacked, the relation between them, and the order in which they are to be presented. Then briefly describe the method you propose to follow, and especially the illustrations you intend to introduce, taking care that the corresponding parts of the double column are placed opposite each other, or at any rate numbered alike.

Let me offer one caution in regard to the form of the notes, for there is a tendency in some minds to frame all lessons of the same kind on the same plan. Because you find a good specimen of notes of a lesson, on some animal, arranged under the heads, "Structure," "Habits," "Locality," "Uses," you must not think that every lesson on an animal should take that form and follow that order. If you are not to turn out a dull, leaden teacher, beware of adopting a stereotyped plan. As you value the element of life and spirit in teaching avoid casting your instruction always in the same mould. Begin with the part that bears most intimately on the children's experience, or that is most closely connected with the last lesson on the subject, and take the other topics in any order that seems to you most natural and effective.

Nor is it well always to arrange the notes in two columns, or to head the columns in the same way. Sometimes the amount of matter to be taught is very small, as a definition in grammar or a rule in arithmetic, and in such a case it would be foolish to rule off a separate column in which to write it. Notes on reading-lessons, again, need no column to show the information to be imparted, as the reading-book determines what is to be taught and in what order.

N.B.—Specimen notes of lessons will be found in the Appendix.

CHIEF POINTS.—

1. In preparing for writing notes—
    - (*a*) First, settle the aim and purpose of the lesson.
    - (*b*) Secondly, search your own mind for ideas.
    - (*c*) Then, read interesting books on the subject.
    - (*d*) Meanwhile, jot down rough notes on such points as seem suitable for your purpose.
2. In drawing up notes of a lesson—
    - (*a*) As a rule arrange in double column under matter and method, or method and examples on blackboard.
    - (*b*) Arrange the selected matter under three or four headings with subdivisions.
    - (*c*) Keep corresponding parts of matter and method opposite each other, or at least number them alike.
    - (*d*) Avoid a stereotyped plan.

NOTES FOR THE BLACKBOARD.

1. Value of the Blackboard.—"Two gateways of knowledge are better than one"; therefore let us not be content to teach through the ear only, when we might teach through the eye also. The blackboard is one of the chief means of carrying this principle into effect. Whatever the lesson, it should stand before the class as an important aid in teaching. It serves both to make the instruction clearer and to impress it more strongly on the mind, and this it does by means of drawings and notes. Leaving the former until we come to speak of Illustrations, I propose to deal here with the latter only.

There are in most lessons two distinct ways of using the board for writing notes; one is the incidental use for jotting down new names whilst the lesson is proceeding, and the other is the more formal use, at convenient halting-places, for recording the principal conclusions arrived at, or the leading ideas already communicated.

2. Incidental Use.—As to the incidental use referred to, it is a great advantage to a class, on hearing a new name or technical term, to see it written at once on the board, for we seldom get a clear idea of such names and terms until we see them in plain black and white. How very seldom do we catch distinctly the name of a person to whom we are introduced! Were it the custom at the time of introduction to exchange visiting cards how much easier it would be to know to whom we were speaking! In teaching we can always do what is analogous to this use of the visiting card; we can on introducing a new name or term write it at once on the board. The names of persons and places unless already familiar, should be written as soon as mentioned. A part of the board may be ruled off for this purpose and kept quite separate from that intended for the summary. Such names should be rubbed off as soon as they have fulfilled their mission.

3. Formal Use.—The summary itself should be written as the record of what has already been discussed. Instead of a hasty immature attempt to jot down the principal facts whilst in the act of telling them it is far wiser to concentrate your attention on the children whilst addressing them, and to make the summing up of what you have said, by a clear and concise statement on the board, quite a separate matter. This summary should be the joint production of the teacher and the taught, the children's contributions being elicited by skilful questioning. Fix attention on what you are writing instead of asking meanwhile a question on the next point, and see that what you write the children read.

The summary for the blackboard should be added by a young teacher to his teaching notes, great care being taken with their form and arrangement, for the relation between things may often be indicated by the relative position of their names on the board. I strongly advise the beginner, in preparing his lesson, to write out the notes for the board on the board itself, with the double purpose of determining the best form and the right amount. It will be found that a little on paper goes a long way on the board, and takes no little time in writing. Of course these rehearsal notes are to be obliterated before the lesson begins, but they will have served a most useful purpose, if they have enabled the teacher to see how best to place them on the board, and how comparatively small the amount either time or space admits of writing there.

It is highly important that the notes on the board should be a clear and concise statement of the main points of the whole lesson, and not a meaningless jumble of things small and great, with much on the early part of the lesson and nothing on the later. The handwriting should be bold enough to be easily read by the class. Care should be taken to avoid anything like a medley of words and figures, for there is a close connection between the state of the board and the state of the children's minds. Slovenly, ill-arranged notes tend to produce inaccurate and confused thought; whilst, on the other hand, a good summary, plainly written and well arranged, helps to call special attention to all the important points, enables the learner to take in at a glance a comprehensive view of the whole lesson, and leaves a clear record on the memory.

CHIEF POINTS.—

1. "Two gateways of knowledge are better than one"; therefore teach when possible through the eye as well as through the ear.
2. The blackboard aids in making the instruction clearer and in impressing it more firmly on the mind.
3. New names and terms should be written as soon as mentioned, but the summary at convenient stopping-places.
4. The summary should be a clear and concise statement of the main points of the whole lesson, and should be the joint production of both teacher and class.
5. Avoid a medley of names and figures on the board as the state of the board affects the state of the children's minds.

ORAL TEACHING.

Before discussing the specific methods of teaching the several subjects of Elementary Education, it will be convenient to study the art of teaching in its more general aspects. We propose, therefore, to determine, first of all, in the light of the principles already laid down, the mode of procedure most suitable to oral teaching in general, that is, without reference to any subject in particular.

TEACHING *versus* LECTURING.

The work of the teacher is, in some respects, more difficult than that of the lecturer. The duty of the lecturer is to master his subject, to arrange his ideas in their natural or logical order, to express them in clear language, and to handle his subject in a fresh and interesting style. He may assume that his audience are desirous of profiting by his discourse and capable of fixing their attention on what he says. The teacher, on the other hand, has not only to provide suitable mental food but to create an appetite for it, not only to offer suitable instruction but to see that it is received. He must, therefore, evoke an interest in the lesson, secure the strict attention of his pupils, and instead of pouring out knowledge, as if pumping on to the devoted heads of his pupils, he must try to prevail on them to draw from the well of knowledge for themselves.

A good lecture, we may say, is one that is *worth* attending to, but no one could say a lesson is good unless it *is* attended to. The measure of success in any lesson may be determined by this threefold consideration: (1) The amount of knowledge gained; (2) the degree of interest excited; and (3) the mental activity evoked. The worth of a lesson, that is, depends upon the effect which it has produced upon the scholars in regard to knowledge, interest, and mental action.

Again, the lecturer simply expounds, explains, and narrates without gauging the effect which his words have upon his audience. He adopts the expository method, pure and simple. Not so the teacher. Having to train the minds of his pupils and to see that the knowledge he offers for their acceptance is actually received, his method must consist largely of questioning. All good teaching, indeed, requires a combination of two modes or forms of instruction—Exposition and Questioning, or telling and asking.

The degree of excellence of the teaching is in proportion to the skill with which these two forms of instruction are combined and the degree of prominence given to one or the other of them. The Expository method should predominate when the lesson consists mainly of facts, new to the class, and beyond the range of their observation; and the Interrogative method, when the lesson is a revisal of some previous one, or when the desired results can be reached by a course of reasoning.

EXPOSITION.

1. Extent of Use.—A certain amount of exposition is needed in every lesson, even when questioning is the chief form of instruction, to bring the knowledge sought after within the learner's reach, to direct his mind into the right quarter for finding it, and to correct any misapprehension his answers may betray. When information is the principal end of the lesson then of course the teacher will chiefly employ the expository method; but the amount of continuous exposition must be regulated by the age of the pupils. The younger the children under instruction the more frequent must be the breaks in the narrative, or description, by means of questioning or simultaneous repetition.

2. **Story-Telling.**—The young teacher should make a special effort to cultivate the power of telling a story really well. Mere generalities and bare commonplace phrases or halting statements will create no interest and yield no pleasure. You have to touch the feelings and kindle the imagination of the young learners, and this you can only do when the story has laid hold of your own heart and imagination. You must first endeavour to realise every little picturesque detail of the story and set the whole incident as a picture before your mind's eye before attempting to relate it. For some time you will find it helpful to write out the story in full, adopting the same style and language that you think would be most suitable for your class. Only when you come to tell the story make no attempt to reproduce the exact language, but leave yourself free to speak the words that rise to your lips. By thus learning to give a simple narrative to little children in a vivid style, you will be acquiring the art of appealing with due effect to the imagination of the older children in your lessons in Scripture, history, and geography.

3. **Explaining.**—The power of giving a clear explanation is also a necessary part of a teacher's outfit. It consists of course in the ability to state an idea or fact in a simpler if not its simplest form. In attempting to do this you must bear in mind the circumstances in which your pupils are placed; many things familiar to children in the country need to be explained in teaching a class of town children and *vice versa.* Avoid over-explaining; when a thing is clear, not a word more. Avoid also over-simplifying, or attempting to remove all obstacles out of the pupils' path. Our aim should be not to make a thing as easy as possible, but only as easy as the case requires. And I need hardly say we should scorn to give sham explanations. The true teacher will have too much

respect both for the truth and for himself to offer a false explanation when unable to give the true one. It is better to acknowledge one's ignorance and to promise an explanation of the difficulty after further consideration and inquiry.

4. Language.—In *explaining* a thing one should use the simplest language of which the case admits. But this rule does not apply to all exposition. It is generally best to use the most expressive and appropriate words rather than mere commonplace forms of expression void of all force and beauty. It is unwise to restrict oneself to words already familiar to the class; new ideas require new words adequately to express them and firmly to fix them. Besides, children best learn the meaning of particular words by being accustomed to their use. The context may generally be made the key to the meaning of a new word, or if necessary an explanatory phrase may be interjected parenthetically.

Simplicity of language depends not so much on the individual words used as on the structure of the sentences and the arrangement of the ideas. When the sentences are tolerably short and free from ambiguous and involved constructions, the children are much aided in getting at the gist of the matter, even if the meaning of particular words is not quite clear to them. The power to interpret the language used is also greatly affected by the sequence of the ideas. When these are arranged in a suggestive order, each leading naturally on to the next, the children are greatly helped in apprehending the meaning of the language used to express them. Expectancy is a good interpreter.

At the same time, I would have you remember that a simple style of language is the one best adapted for teaching poor children whose vocabulary is extremely limited, and that the most homely words are often the most vivid and graphic that we can employ. In illustration of this remark, let me ask you to compare Dr. Johnson's account of an incident in the High-lands written for the public eye and his account of the same incident in a private letter to a friend: (1) "Out of one of the beds on which we were to repose started up at our entrance a man black as a Cyclops from his forge." (2) "On our entering the room a man as black as a tinker bounced out of one of the beds on which we were to lie." Which of these accounts brings the scene most vividly before the mind?

CHIEF POINTS.—

1. The Expository method is the one to be chiefly employed when information is the principal end of the lesson.
2. Exposition takes one of two forms—
    - (*a*) Telling a story, describing, or narrating.
    - (*b*) Explaining and illustrating (orally).
3. Cautions in explaining—
    - (*a*) Do not assume the possession of the same outdoor knowledge in the case of town and country children.
    - (*b*) Avoid over-explaining and over-simplifying.
    - (*c*) Never give a sham explanation; better acknowledge your ignorance.
4. Simplicity of language largely depends on—
    - (*a*) Structure of the sentences.
    - (*b*) Order of the ideas; expectancy is a good interpreter.

QUESTIONING (A).

1. Its Various Uses.—It is not easy to overrate the importance of good questioning as a form of instruction. Its worth as a means of testing the amount and accuracy of the knowledge gained is well known, but it is really still more valuable as a means of instruction. Questioning, indeed, serves a useful purpose from the beginning of a lesson to the end of it. At the commencement, it forms a link between old knowledge and new, between the knowledge already possessed by the children and that you wish to impart. It serves also, in the course of the lesson, to stimulate the learners to think, whilst enabling the teacher to make sure of his ground. And, in the final examination it gauges the effect of his teaching.

2. As a Means of Instruction.—A well-arranged series of questions sets plainly before the class the several points of difficulty, one by one, in due sequence. Looking upon the lesson to be mastered, as a steep height to be climbed, each question is a step cut out on the hill-side, enabling the learner to ascend by his own exertions. The teacher might save him this trouble by telling instead of asking, by explaining instead of questioning, and thus carry him up, as it were, to the crown of the hill on his shoulders. It is true that the learner might in this way get a good view of the field of knowledge, on the way up, and more quickly reach the summit; but the fibres of his mind will not have been braced by exercise, nor will he have gained greater power for ascending another hill in his own strength.

The questions proposed as a means of instruction should be of a suggestive character, each growing out of the preceding answer, and gradually leading on the learner to the desired conclusion. Whenever a course of reasoning is thus carried on by question and answer, not only must each question be skilfully dovetailed into the preceding answer, but there must be no hurry nor impatience in the process. It is as impossible for a child to use his reasoning powers with success, when flurried or in fear, as it is for a person to write in a fair hand on a piece of paper fluttering in the wind. When a child fails to answer correctly, in the course of a piece of reasoning, three alternatives are open to you: you may express the question in plainer language, or break it up into two or three easier questions, or retrace your steps and return once more to the original question.

Questions proposed incidentally, in the course of a description or narrative, have also a distinct value as a means of instruction; for they serve to sustain the children's attention and to secure their co-operation. The younger the children the more frequent should be these breaks in the exposition.

3. For the Purpose of Examination.– Questions for this purpose are asked after each division of the lesson as well as at the end of it. The object of such questions is not only to test the children and ascertain how much they have really learnt, but also to deepen true impressions, to correct false notions, and to supply omissions. Mere random questions, or even clever cross-questioning, will therefore not suit our purpose. If we want to leave a clear impression on the mind of what we have taught, then our questions must be arranged in due order, not shot about the class in haphazard fashion; in fact, the answers educed from the children, if they could be taken down at the moment, ought to form a clear and complete summary of the contents of the whole lesson.

In examining a class on a lesson prepared or just delivered, you will do well to observe these four rules: First, let the questions be *searching*, or directed mainly to the difficult and important points of the lesson; secondly, let them be *unsuggestive* so as not to give a clue, by their mere form, to the right answers; thirdly, let them be *limited* to the lesson given or prepared, so as not to discourage the diligent and attentive by placing them on the same footing as the idle and careless; and, fourthly, let the questions be carefully *connected*, each being the outcome of the preceding answer.

CHIEF POINTS—

1. Questions are useful from the beginning to the end of a lesson—
    - (*a*) To form a link between old knowledge and new.
    - (*b*) To stimulate the learners to think.
    - (*c*) To enable the teacher to make sure of his ground.
    - (*d*) To gauge the effect of the lesson.
2. Questions for the purpose of instruction should be—
    - (*a*) Suggestive, each growing out of the preceding answer.
    - (*b*) Proposed without hurry or impatience so as not to cause flurry or fear.

CHIEF POINTS—

3. Objects of examining a class :
    - (*a*) To test the amount of knowledge gained ;
    - (*b*) To deepen true impressions, correct false notions, and supply omissions.
4. Questions used in examining should be—searching, unsuggestive in form, limited to the lesson, and carefully connected.

QUESTIONING (B).

Good questioning being such an efficient instrument of teaching, it will well repay the young teacher to get clear ideas respecting the right structure of questions, and to make a special effort to become a skilled questioner. Every well-formed question serves to concentrate the minds of the learners on some particular point ; it both stimulates and aids them to think. Bearing this characteristic of a good question in mind, we shall be able to settle what tests it should be able to stand.

In the first place, *a question should be expressed in clear and concise terms that admit of no uncertainty.* Therefore, all roundabout, unnecessary and parenthetical phrases should be avoided. It is a great point in questioning to say as little as possible, leaving the larger share of the talking to the children. Short questions and long answers should be our aim. Remember then in questioning to be chary of your words and to use the plainest possible.

Avoid loading the question with such introductory phrases as : "What did I tell you ?" "Hold up hands who can tell me." All prolix questions like the following are still more objectionable : "Then I told you that the highest mountain in Sicily is covered with perpetual snow, can you tell me its name ?" "Now I am sure if you have been attentive you can tell me the name of the English commander at the battle of Tel-el-Kebir, what is it ?"

Secondly, *a question should generally be so pointed and definite as to admit of only one correct answer.* A definite question presents one point for consideration, and concentrates the mind upon it, whereas a question that is wide and vague leaves the door open for numerous answers, all equally admissible. Definite questions tend to produce an unity of mental action in the class, for they set the children thinking of the same thing at the same time, and when this is the case all profit by each correct answer. But when the questions are wide and uncertain in character, the thoughts of the children are scattered, a variety of answers is forthcoming, encouragement is given to guessing, and mental confusion ensues.

Take the following as examples: (1) *Definite questions:* Name the largest island in the Mediterranean. Describe its shape. How is it separated from Italy? (2) *Indefinite or vague questions:* Name one of the largest animals in the hottest part of the world. What kind of dog is used in hunting? What did Queen Elizabeth leave behind at her death?

Thirdly, *a question should require real thought.* A question that demands no mental exertion is not worth asking. Two kinds of questions, which are far too common, are put out of court by this requirement, namely, "echo questions" and "alternative questions." An *echo question* is a question on a statement just made, e.g., "A tiger is a large kind of wild cat. What is a tiger?" "It is found in the jungles of India. Where is it found?" Obviously no mental action is evoked by such questions; a mere mechanical repetition of the words spoken is all-sufficient.

An *alternative question* is one that admits of a choice between two answers only, as "yes" or "no," "hot" or "cold," "light" or "heavy." The children generally know quite well from your tone of voice and emphasis which answer is expected, and if no hint is given a mere guess will be as likely to prove right as wrong. Such questions as can be answered by a simple affirmative or negative are not always out of place, but the child who answers should be expected to give, if possible, a reason for his reply.

Fourthly, *questions should be varied in form and character, and as a rule be not answerable in a single word.* A teacher cannot cast all his questions in the same mould without his work becoming mechanical and tedious. One of the worst forms of mechanical questioning, with which I am acquainted, will be apparent from the following example of an examination on a reading lesson:

> (1) Then we read that the Hindus make pilgrimages to certain cities of the Ganges for a particular purpose—what is that purpose? (2) Then we were told the names of three cities which are very sacred in their eyes—name those three cities. (3) It then tells us on what river those cities are situated—what is its name? You will readily observe that these questions are very prolix, that they are built on the same lines, and formed by following the order and phraseology of the book. These three faults would be avoided if the questions were thus framed: (1) Name the three most sacred cities of the Hindus. (2) On what river do they stand? (3) Why do the Hindus visit them?

Sometimes one hears a number of questions in succession, all of which take the same form and may be answered by a single word. Such questions demand the minimum amount of thought. Compare the two following sets of questions, and you will perceive how much more searching and varied in character the second set is than the first.

> *First set:* (1) What is the central body of our solar system? (2) What name is given to those bodies that revolve round the sun? (3) What are those bodies called that revolve round a planet? (4) What is the name of the planet on which we live? (5) What is the earth's satellite called?

> *Second set:* (1) What is meant by the solar system? (2) What position does the sun occupy in that system? (3) What bodies revolve around it? (4) What are planets? (5) Name the planet that we are most familiar with. (6) What are those bodies called that revolve round a planet? (7) What then is a satellite? (8) Name one that we can see with the naked eye.

Lastly, in questioning a class on a lesson just read or prepared from a text-book, *avoid the language of the book.* If the questions are expressed in the words of the book, so also will be the answers, in which case the questioning fails to be a test of the pupils' apprehension of the lesson, and the whole process becomes an exercise in reproducing phrases from memory.

CHIEF POINTS.—

1. A question should be expressed in clear and concise terms that admit of no uncertainty. Aim at short questions and long answers.
2. A question should generally be so pointed and definite as to admit of only one correct answer. Therefore avoid wide and vague questions.
3. A question should require real thought. Hence avoid
    - (*a*) "Echo questions," or such as relate to some fact just stated.
    - (*b*) "Alternative questions," or such as admit of a choice between two answers only.
4. Questions should be varied in form and character, and as a rule be not answerable in a single word. Otherwise the questioning is mechanical and the answering superficial.
5. In questioning on a lesson got up from a book avoid its phraseology.

QUESTIONING (C).

1. **Mode of presenting Questions.**—We have already spoken of the value and functions of Questioning as a device in teaching, and of the rules to be observed in framing questions. We come now to the mode of presenting questions so as to keep all on the alert and in full activity of mind. For this purpose let each question be addressed to the whole class so as to make all feel themselves liable to be called upon for an answer. Let those who think they can answer hold up their right hand, and then as a rule select one of them to give the answer, but often make a special appeal to the indolent

or backward if the question is within their range. You will be guided in your selection by the degree of difficulty involved in the question, and by the symptoms of inattention or listlessness on the part of certain individuals. You will aim, however, at making your selection pretty evenly over the whole class, giving rather more opportunities of answering to the backward than the more forward.

2. Simultaneous Answering.—In the mode of questioning just described only one pupil speaks at a time. This practice is, in general, much preferable to simultaneous answering, which is open to the following objections: (1) The questions must be so framed as to admit of an obvious answer expressible in a word or two; (2) under cover of the answer from the class in general the idle and incapable escape detection, either keeping silent or joining in the sound regardless of the sense; (3) unless in a separate room, the class thus answering interrupts the work of other classes. Simultaneous answering, however, has a legitimate place in school-work. It is an expeditious way of running over the chief points of a lesson already discussed, it is a means of rousing the flagging energies of a sleepy class, and it is a great help in keeping a large class of "infant children" happy and animated.

3. Elliptical Questioning.—Simultaneous answering goes best with *Indirect* or *Elliptical Questioning*, which consists in leaving a word or phrase at the end of a sentence for the children to supply. In framing an elliptical question, you must take care that the part of the sentence given suggests the part required, and that a moment's thought will suffice in order to give it. It is an expeditious way of questioning, and is very encouraging to little children, who are apt to be shy and diffident when a direct question is put to them, for such a question seems to them a sort of challenge. But in putting the question indirectly, as is done in Elliptical Questioning, the teacher appears to the little ones to take his stand on the same platform as themselves, and the whole lesson seems to be the result of their joint efforts.

As an elliptical question leaves a part of the sentence for the children to supply, it is most desirable that it should be completed at once by the whole class answering together. Elliptical Questioning, therefore, best goes with simultaneous answering and is subject to the same limitations. It is altogether out of place in examining a class, the questions being too suggestive and demanding an immediate reply from the whole body. It is most useful in the course of a story or narrative to enlist the children's co-operation, and is almost indispensable in teaching a class of "Infants." And in any class, it is serviceable in recapitulating the main points of a lesson, more particularly in connection with notes on the blackboard.

CHIEF POINTS.—

1. Questions should be addressed to the whole class, but only one at a time should, as a rule, be allowed to answer.
2. The selection of children to answer should be made from all parts of the class, more frequent appeals being made to the idle or backward.
3. Simultaneous answering is a capital way to keep little children happy and animated. It goes best with Elliptical Questioning.
4. Elliptical questions are out of place in Examining as they are too suggestive and call for an immediate answer from all in the class.
5. They are very useful in the course of a narrative addressed to little children, and in any class whilst recapitulating the main points of a lesson.

ANSWERING.

1. Chief Qualities.—Good answering is, in no small measure, the result of good questioning. Its chief qualities are thoughtfulness, clearness, and correctness; that is to say, a really good answer is the outcome of the pupil's own thought, it is clear in expression, and correct in substance. Let us consider how these three qualities may be best cultivated.

(*a*) *Thoughtfulness.* — To encourage thoughtfulness in answering, we must give definite questions that demand thought, and allow sufficient time for thinking before accepting an answer. It is well to encourage promptness in answering, but not at the expense of careful thinking. One should vary the pace according to the amount of thinking requisite, regulating it by the capabilities of the slower members of the class.

(*b*) *Clearness.*—If we would train our pupils to express their ideas clearly, we must frame clear and concise questions, and prevail on them to do their utmost to give full answers. Children often hint at the truth and hope that the teacher will be satisfied with the scraps they offer. But as experience teaches, "ideas gain immensely in clearness by being set forth in words." We must, therefore, spare no effort to get our scholars to state fully and distinctly what they have to say. And this we should do, not only in the interest of clear thought, but as the means of cultivating their command of language, and of really testing their knowledge.

(*c*) *Correctness.*—To obtain answers which are correct in point of fact, we must ask only such questions as the pupils can be fairly expected to answer. To do otherwise is to encourage the practice of guessing, and therefore to foster the habit of careless thinking and rash statement. In the interest of truth and truthfulness we should insist on having every answer stated distinctly and audibly. There should be no slurring over or muffling up, but every answer should be so rendered that the truth or error may plainly appear. It must be remembered that the answers given by each individual are the common property of the class. If an answer is correct it helps to impress the truth upon all who hear it; if it is erroneous, it serves when corrected to set right all who entertained the error.

And here let me take the opportunity to point out the importance of correcting errors effectually, not merely setting the pupil right who answered wrong in a casual sort of way, but taking pains to remove the root of the error, and to impress the truth upon all, bearing in mind that where one pupil has manifestly gone wrong many have secretly done the same. A good deal of power is thrown away in teaching from not knowing the precise spot of darkness to be enlightened, the precise point of difficulty to be dealt with, but in correcting errors there is no waste of power, every word tells.

2. Kinds of Answers.—Much judgment is needed to treat wisely the various answers given, to separate truth from error, to supply deficiencies, to show approval or give reproof. We must judge of the answers by a treble standard; the amount of truth they embody, the quality of thought they give evidence of, and the suitableness of the terms in which they are expressed. The different kinds of answers and the way of treating them may be thus indicated:—

1. Remarkably good, suggesting a word of praise.
2. Simply correct, requiring simple assent.
3. Correct but incomplete, needing more pointed questions to bring out the complete answer.
4. Partly correct and partly incorrect, requiring a few sifting questions to separate the true from the false.
5. Entirely wrong but the fruit of independent thought, suggesting another way of handling the subject so as to remove the cause of misconception.
6. Simply wrong, calling for no remark; or containing only a grain of truth not worth extracting.
7. Absurdly wrong, deserving reproof for carelessness or thoughtlessness.

3. Treatment of Answers.—A few cautions may be appended which are often much needed in the treatment of the children's answers. There are two extremes to be avoided in the mode of dealing with them: on the one hand, the rejection of all answers, good, bad, and indifferent, that differ in form from the one you want; on the other hand, the feeble half-hearted acceptance of all answers proffered until the desired one happens to turn up. A medley of answers, causing the young teacher to feel helpless and almost in despair, is the result of vague questioning, and the proper remedy is to recast the question. But sometimes the failure of the teacher to get what he wants arises from his foolishly rejecting all answers that differ merely in form from the one in his own mind. If you want the answer expressed in a particular form, you should accept the first answer which is substantially correct, and then endeavour by further questioning to reduce it to the desired shape.

I need hardly say that you should not be satisfied with good answers from a few of the more advanced pupils, but should often make a special effort to get answers from the more backward or less industrious. This is obvious, but there is great need of warning the clever young teacher against the practice of holding up to ridicule the incorrect answers that seem to him extremely foolish. A little more experience will convince him that many an answer which at first sight seems absurd is the result of honest thinking misdirected. It is indeed one of the charms of the true teacher's occupation, on receiving a *bona fide* answer seemingly absurd, to discover the origin of the error, or the child's point of view from which the misconception arose.

Beware then of making your pupils' answers the subject of ridicule. Children are very sensitive on this point and their feelings are easily wounded by sarcastic remarks. They soon become shy and reserved in answering a teacher with a vein for ridicule or a tongue that stings. A little good-natured banter, however, sometimes serves as a useful fillip, brightening up the whole class as well as the intellect of the child under treatment. If sarcasm is ever in place it is in dealing with a pupil who is forward and conceited, but it is a dangerous instrument in the hands of the inexperienced.

CHIEF POINTS.—

1. The chief qualities of good answering are thoughtfulness, clearness, and correctness.
    - (*a*) For thoughtfulness—give definite questions and time for thinking.
    - (*b*) For clearness—let children answer fully and distinctly.
    - (*c*) For correctness—give only such questions as the pupils can be fairly expected to answer.
2. In dealing with the children's answers you have—
    - (*a*) To separate truth from error.
    - (*b*) To get partial answers completed.
    - (*c*) To mark with approval or disapproval.
3. The different kinds of answers and their proper reception: (*See* previous paragraph in small type).
4. Cautions needed in dealing with answers—
    - (*a*) Do not reject an answer substantially correct because it is not expressed in the form you wish.
    - (*b*) Beware of making the pupils' answers the subject of ridicule.

ILLUSTRATION.

1. **Use of Illustrations.**—Good teaching and a marked power of illustrating go together. The good teacher without the gift of apt illustration has not yet seen the light. By means of illustration a teacher is able to present his instruction in a concrete and picturesque form which has the effect of making it both lucid and interesting. The use of illustrations involves comparison between one thing and another, and that is always a source of pleasure both to young and old. As a result of the clearness and interest given to instruction by illustrations a deeper and more lasting impression is left on

the mind. We may infer, then, that the object of illustration is to elucidate, to interest, and to impress.

There are two distinct kinds of illustrations, one reaching the mind through the eye, the other through the ear, and these may be called *visible* and *verbal* illustrations respectively. Among the former come objects and experiments, pictures and diagrams, maps, models, and drawings.

2. Verbal Illustrations.—Let us consider, first, the function of verbal or oral illustrations. Their chief use is to make clear the meaning of a general statement or abstract idea by the aid of particular examples. Thus, what is meant by the class of "carnivorous animals" would be made clear by naming the lion, tiger, and other flesh-eating animals; what is meant by "self-denial" would be impressed on the mind by mentioning such incidents as that of Sir Philip Sydney and the wounded soldier. One particular case may also be illustrated by another; as the action of a fly's feet in walking on a ceiling by that of a boy's sucker.

In comparing things, for the purpose of illustration, we may select those which have, in certain points, either a close resemblance or a striking difference. We usually select those which resemble the thing to be illustrated, but sometimes the best way of teaching what a thing is is to contrast it with what it is not. Thus we can best form an idea of "spirit" by contrasting it with "matter," and of the strange "customs of the Chinese" by placing them in contrast with our own.

For oral illustrations to be effective we must take care that our reference is to things familiar to the pupils. Thus in a lesson on "Dew," it would be foolish to refer to the deposition of dew on a bottle of wine brought up from a cold cellar and placed on the sideboard of a hot dining-room, although the fact is in itself a good illustration. And in judging of what is familiar to our pupils we must always bear in mind the difference in the experience of children, according as they come from comfortable homes or the reverse, and have been brought up in town or country. Further, we must not merely refer to a thing as an illustration, but see that the points of resemblance or contrast are clearly apprehended.

3. Visible Illustrations.—We have next to consider the nature and use of visible illustrations, which form one of the prime sources of profitable pleasure in the education of children, who delight in things that they can see and handle. "What we know as children is for the most part what we can see." Whatever enters the mind through the eye is more clearly perceived, more keenly enjoyed, more deeply impressed, and in consequence more easily remembered than anything that enters it in any other way. These advantages accrue from all visible illustrations, whether specimens or experiments, models or pictures, for they all alike impress the mind through the eye. Some of them, as I will now show, offer special advantages besides.

Objects and experiments put the learner in the way of getting his knowledge at firsthand, enabling him to learn by his own observation. There are two ways of using this kind of illustration: either as the groundwork of the teaching, helping the learner to draw his own conclusions from what he sees; or as a means of giving clearness and certainty to the instruction just offered. Objects usually serve best as the groundwork of a lesson, for the children can readily learn from them by direct observation. But experiments come in best, as a rule, after the young observers have been prepared by a little instruction for watching them with intelligent eyes, and have been distinctly told what to look out for. Simple experiments, however, like that of inverting a glass of water on a piece of cardboard, may be given without introductory remarks to excite curiosity and set the children thinking.

Pictorial representations, whether pictures, diagrams or maps, offer the advantage of colour, which is both attractive and instructive. The essential characteristics of such illustrations for school purposes are boldness, clearness, and truthfulness as far as the representation goes. Minute detail is a drawback, and high finish unnecessary, but truthfulness of drawing and colouring is essential. Such illustrations should not be placed before the class until the moment has come for using them.

Drawings on the blackboard lack the advantage of colour, but when executed with fair skill in front of the class, they are in many respects superior as illustrations to the finished picture. The pupils watch with keen interest each part of the drawing as it comes into being before their eyes. And the teacher can suit the action to the word, making the drawing and the description advance together. "Children who are jaded in five minutes by a lecture will be open-eyed and receptive for half an hour while the teacher draws as well as talks." As the attention is concentrated on each part in turn the children get a clear and vivid impression of the whole drawing, and are thus helped to form a good idea of the thing represented. Such drawings not only serve as good substitutes for pictures not kept in the school, but they are most useful for showing some particular part of a picture on a larger scale. Great care is necessary to guard against misconception as to the size of the objects drawn on the board. Their actual size should always be indicated.

It would be difficult to overrate the value of drawing as a means of teaching. The young teacher is ill-advised who makes no strenuous endeavour to acquire the power of drawing with facility on the ground that he has no natural talent for the art. Should this be true, he will of course never excel as a draughtsman, but it will be his own fault if he does not learn to draw sufficiently well for his illustrations on the board to be of great auxiliary service.

CHIEF POINTS.—

1. The object of illustration is to elucidate, to interest, and to impress.
2. The chief use of verbal illustration is to make clear the meaning of a general statement or abstract idea by means of particular examples.
3. In illustrating we may compare things which have, in certain points, either a close resemblance or a striking difference.
4. For an oral illustration to be effective the thing referred to must be familiar.
5. Visible illustrations, which impress the mind through the eye, always give pleasure and make a lasting impression.
6. Objects and experiments enable the learner to get his knowledge at firsthand.
7. School pictures should be clear, bold, and truthful both in form and colouring.
8. Drawings on the board are very valuable as illustrations when executed with fair skill in front of the class; for
   - (*a*) The pupils watch with keen interest.
   - (*b*) Drawing and description can go on together.
   - (*c*) Attention is concentrated on each part in turn.
   - (*d*) Any particular part of a picture can be drawn on a larger scale.

HOW TO TEACH READING.

AIMS.

Of all the secular subjects of instruction reading ranks first in importance, for the child who has gained the power of reading with facility is in possession of the key of knowledge. But that he may make a diligent use of that key, the love of reading must be early implanted in his mind. We should, therefore, do our utmost to make the task of learning to read a pleasant one, or at any rate to teach "reading without tears." And as a child, in after life, will never voluntarily read a book unless he can do so with ease and pleasure, we should secure for him, while at school, sufficient practice in reading to give him the necessary facility. Our first aim, then, will be to induce the love of reading, and our second to impart the power of reading without painful effort.

Our third aim must be to enable each child to grasp the meaning of what he reads, and to acquire knowledge from books by the exercise of his intelligence. It is, certainly, most desirable that our pupils should be trained to read aloud in good style so as to be easily intelligible to others, but it is of much greater moment to most persons to be able to read to themselves in a way that conduces to their own pleasure and profit. However great, then, our effort to teach our pupils the art of reading to others, still greater should be our endeavour to train them to read and study books for their own advancement in knowledge and understanding.

Much time and effort are often thrown away in a vain attempt to make a rough set of lads read with correct pronunciation and with a scrupulous regard for the aspirate, when there is not the least chance of their adopting that style of speaking beyond the walls of the schoolroom. Much more important is it to get them to take a lively interest in what they read and to understand their own mother-tongue. The degree of refinement aimed at in teaching children to read should wholly depend on circumstances; it is entirely a matter of expediency, not like a moral law which must be observed under all conditions.

As our methods should be shaped by our aims, let us clearly understand that in teaching reading we have three ends to keep in view: to instil a love of reading, to give facility in practising the art, and to develop the power of gathering knowledge from books by silent study. In brief, our great aim should be to enable our scholars to read with ease and pleasure, and to profit greatly from silent converse with their books.

METHODS.

There are three distinct methods of teaching reading to beginners, namely, the Alphabetic, the Phonic, and the Look-and-Say or Word Method. The *Alphabetic Method* teaches words by means of the letter-names; for the names of the letters, with the exception of *w*, *h*, *y*, suggest the sound of all regular words formed from them. The *Phonic Method* is an attempt to teach words by means of the letter-sounds, the children being taught, as far as possible, to give to each letter of a word the sound which it represents in the word itself. The *Word Method* requires the young learners to look at each word as a whole and to repeat its name after the teacher, as the readiest and least irksome way of learning to read new words.

The Phonic Method has comparatively few supporters and may safely be set aside. We have then to choose between the other two. The cardinal facts to be taken into account in determining this question are the irregular way in which our words are spelt, and the variety of ways in which the same sound is represented, as for instance the sound of *o* in the words so, sow, sew, soul, sole, goal, gold.

This fact tells strongly in favour of the Word Method, to which regularities and irregularities are alike indifferent. This method also falls in with the fact that we recognise words by their general appearance. But it is open to two serious objections: though new words are readily learnt they are soon forgotten, and the pupils by this method do not acquire the power of making out new words for themselves. In practice, however, this objection is overcome by requiring the pupils, after learning to read a passage by the Word Method, to spell all the regular words it contains.

On the whole it seems best to make a combined use of both the Alphabetic and the Word Method, employing the former for regular words and the latter for irregular. It is a great advantage to use a Primer in which new words are divided into two sets, regular and irregular, and to teach the former by sound, the latter by sight; that is, the former by spelling, the latter by telling.

In teaching beginners variety of treatment is of great consequence. Not only should they read from the cards, but they should construct words from a box of letters, and be exercised in word-building on the blackboard. In the transition to books the difficulty is minimised by providing the children with books containing the same lessons they have previously read from the cards.

QUALITIES.

The qualities of good reading to be looked for in our elementary schools are chiefly these: clear articulation, correct pronunciation, a fluent delivery, the right distribution of emphases, and a suitable modulation of the voice. *Articulation* requires an energetic play of the lips and careful attention to the final consonants of each word. *Pronunciation* relates more particularly to the sound of the vowels and the place of the accent. Correctness can only be obtained by the persevering correction of errors. *Fluency* requires the instant recognition of words, and is only obtainable by prolonged practice in reading. *Emphasis* is a stress, in varying degree, laid upon particular words of a sentence to give them due prominence, and the power of regulating and rightly placing the emphasis is the result of a just appreciation of the sense. Hence to get a right distribution of emphases steps must be taken to make the meaning clear. A suitable *Modulation* of voice may be chiefly cultivated by the imitation of the teacher's pattern reading, but much may be done by giving the pupils something interesting to read and by bringing out the interesting points.

DEVICES.

There are two distinct objects to be aimed at in every reading lesson: first, to enable the children to overcome the mechanical difficulties involved in recognising the words and in saying them distinctly, fluently, and correctly; secondly, when that has been accomplished, to enable them to read the same with taste and intelligence. The chief devices for securing these objects are pattern reading by the teacher, simultaneous and individual practice in imitation of his model by the pupils, with the careful correction of errors and necessary explanations.

1. **Pattern Reading** should play a prominent part in teaching large classes of little children, both in helping them to name the words correctly, and afterwards to read the same in a natural and pleasant style. But as the children make progress in the art, the amount read to them by the teacher

should gradually diminish, and, except in the lowest classes, he should seldom read to aid the children in overcoming the mechanical difficulties, but only to assist them in reading with due expression. The amount to be read by the teacher before the children are called upon to imitate will vary from a word to a paragraph according to the ability of the children and the difficulty of the passage.

2. **Simultaneous Reading** is of great service in the lower classes when the teacher first sets the pattern for the children to imitate. Young children delight in combined effort, they throw off all shyness when acting together, and endeavour to modulate their voices like the teacher and to reproduce his style. By this device the class is kept attentive, and more reading practice is secured for each individual. In addition to these advantages simultaneous reading is very helpful in promoting distinct enunciation and in regulating the speed of the reading. But it does not admit of the freedom essential to the production of really expressive reading, and therefore in the upper classes the teacher's model reading should be followed as a rule by individual imitation. But it must be remembered that even in the lower classes, in which simultaneous reading may be largely practised, there must be a good proportion of individual effort.

3. **Correction of Errors** calls for the exercise of sound judgment. A young teacher, full of zeal and good intentions, is apt to think that he is bound to draw attention to every fault and blunder committed by even the poorest reader in the class. Such a proceeding is not only disheartening but very barren of result. If you are too exacting about little faults, still more if disposed to use a microscope to detect and magnify them, you will destroy the effect of correcting really great faults. In dealing with a backward reader, it is wise to set narrow limits to the amount he has to read, and thus prevent too many errors, needing correction, from accumulating.

Except with little children corrections should be deferred until the reader has finished his portion. His class-mates should be expected to note the blunders made by the reader, but not to distract his attention by holding up their hands while he is reading. During the first time of reading the lesson, the corrections made by the scholars should be restricted to the blunders made in naming and pronouncing the words; but in going over the lesson the second time, they should be encouraged, especially in a high class, to mention faults of style as well as mere mistakes. The teacher in his criticism should be careful to mention good points as well as bad. When the faults are serious, he should not only point them out, but show how to amend them, and let the reader try again.

PURPOSES.

A reading lesson may serve three purposes—improvement in reading, the study of language, and the acquisition of knowledge. Of these three improvement in reading should usually be the main object of endeavour, most of the time of the reading lesson being devoted to the actual practice of reading. But when we consider that to an ordinary pupil the power of reading to himself with intelligence is even more important than ability to read aloud with fluency and exactness, we shall take care that he both understands what he reads and gathers knowledge therefrom, which is equivalent to saying that we shall question him on the meaning of the more difficult words and phrases, and examine him on the contents of the lesson. Hence any ordinary lesson in reading will include three distinct processes—the practice of reading, explanation, and examination.

1. **Explanation.**—It is better in conducting a reading lesson to proceed on the principle of "one thing at a time." Let the lesson be first read through with little or no questioning

on the meaning, so that the children may concentrate their efforts on the mechanical difficulties, and gain an insight into the general purport of the lesson. They are then prepared to study the language so far as that is requisite in the interest of intelligent reading; but in general only a very limited time can be spared for explaining the language of the reading lesson. The following hints on this topic may be found useful:—

(1) Defer the explanation till the children have mastered the mechanical difficulties of the reading. (2) Do not over-explain, and select only the most difficult points for elucidation. (3) Endeavour to get the meaning from the pupils by reference to the context. (4) Explain phrases as well as words. (5) Put the explanation in popular form avoiding formal definitions. (6) Illustrate the meaning of the more difficult words by giving examples of their use. (7) Make a free use of the blackboard as an aid in making clear.

2. Examination.—As the examination on the subject-matter naturally comes last in the lesson it is liable to be crowded out entirely. It is true that when a story or pleasant narrative has been read time is only required for a few questions on the main features; but when the lesson abounds in valuable information, it is well to read less and examine more, sufficient time being reserved for testing the class on the knowledge they have gained, and for fixing the chief facts on their minds.

A lesson, chiefly valuable for its information, might very suitably be prepared in the higher classes by silent reading. It is of the greatest consequence to accustom the children, before leaving school, to the practice of gathering knowledge from the pages of a book by their own silent, and therefore independent, efforts. This silent preparation must, of course, always be followed by a thorough examination.

In examining, it is generally best for the teacher to question the class on what he himself has already garnered in his mind from reading the lesson instead of framing his questions by constant reference to the book. He will then speak directly from his own mind, and in his own language, and this will naturally lead the pupils to do the same.

NOTE.—*Exercises in Spelling and Grammar are intimately connected with the reading lesson; they should, however, form no integral part of the lesson itself, but be taken separately after the reading lesson is finished. The child's attention should be given to one thing at a time.*

CHIEF POINTS.—

1. Chief aims—to instil a love of reading, to give facility in the art, and to develop the power of gathering knowledge from books by silent study.
2. Three chief methods of teaching reading to beginners—
   - (*a*) The Alphabetic by the letter-names.
   - (*b*) The Phonic by the letter-sounds.
   - (*c*) The Word Method by the general appearance of words.
3. Method recommended, a combination of the Alphabetic and Word Methods—regular words by the former, irregular by the latter.
4. Qualities of good reading—
   - (*a*) Clear articulation requiring special attention to the consonants.
   - (*b*) Correct pronunciation with special reference to the vowels and the place of the accent.
   - (*c*) Fluency of delivery as the result of extensive practice.
   - (*d*) Right distribution of emphasis depending on a just appreciation of the sense.
   - (*e*) Suitable modulation of the voice to be obtained by imitation.
5. Pattern reading—
   - (*a*) For helping little children, first to name the words correctly, and afterwards to read in pleasant style.
   - (*b*) For aiding the older children to read with due expression.
6. Simultaneous reading—
   - (*a*) Most useful in the lower classes to keep all happily employed, to promote distinct enunciation, and to regulate the speed of reading.
   - (*b*) Occasionally useful in the higher classes in imitation of the teacher's model.

CHIEF POINTS.—

7. Correction of Errors—
    - (*a*) To be deferred until the reader has finished his portion.
    - (*b*) Mutual correction to be encouraged.
8. Explanation—See previous paragraph in small type.
9. Examination—
    - (*a*) Question on the main points of the whole lesson rather than minutely on a portion.
    - (*b*) In framing questions avoid the phraseology of the book.

HOW TO TEACH WRITING.

GOOD WRITING.

1. Its Value.—The ability to write well often gives a boy or girl a capital start in life, on leaving school. The training required to impart this skill forms no unimportant part of a child's education. If properly taught his eye has been trained to observe accurately and his hand to execute deftly. Much, also, has been done to form in him the habits of neatness, care, and precision.

The reputation of an elementary school in the outside world is often based more upon the scholars' penmanship than on anything else. It is certainly the chief index of the efficiency of the school in the eyes of the parents, many of whom can only judge from the appearance of the copy-books. This is of course an imperfect criterion, but it serves very well as a rough and ready test of the kind of education their children are receiving. A good style of writing throughout a school is a strong testimony to the Head Teacher's influence over his scholars, his power of discipline, and his careful painstaking work. For in teaching writing we have not merely to show the scholars what to do and how to do it, but we have above all to get it done, and this is only possible when the work is in the hands of a teacher who has the resolution and persuasive force to prevail on his pupils steadily and constantly to do their very best.

2. Its Characteristics.—Whilst on the threshold of our subject let us set clearly before our minds the characteristics of a good style of writing so that we may know what to aim at in our teaching. I should consider that style of writing the best which can be most easily read and most rapidly written, and which appears most pleasing to the eye; that is, the chief things to be aimed at in teaching writing are, in the order of importance, legibility, rapidity of execution, and beauty of style.

Legibility demands simplicity and boldness of outline with the absence of all flourishes and useless turns. The more nearly script approaches print the more legible it will prove. This fact suggests that the letters should be upright or nearly so, that they should be regular in size and compact in formation, that the space between the letters should be greater than between the parts, and that the words should stand clearly apart from each other.

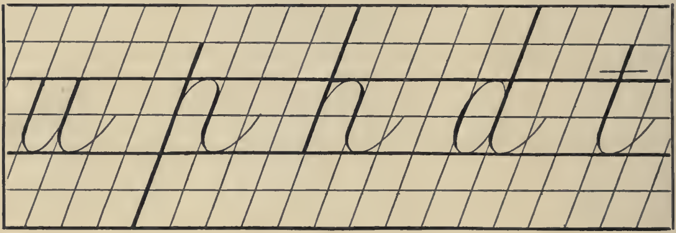
Rapidity is, of course, only to be aimed at in an upper class; but however slow the writing in the case of beginners, they should be trained from the first to write each word continuously, not lifting the pen before completing it. Nor should speed at any time be permitted at the expense of neatness and legibility. One should look to extensive practice as the chief means of acquiring rapidity.

Beauty depends on regularity, on the character of the curves, and the nature of the stroke. A good stroke implies firmness, smoothness, and due thickness, and is only producible by an even pressure on the two sides of the pen. The most graceful curves are those founded on the ellipse, not the circle. Regularity implies the same slant with an unvarying size and spacing of the letters.

COPY-BOOKS.

Before choosing a set of copy-books the teacher must first settle whether he is in favour of sloping or upright writing. It is difficult to keep to perfectly upright writing; there is always a strong tendency to deviate from the vertical and to write back-handed. This style of writing, however, prompts the pupil to sit "square" instead of sideways, with the shoulders even instead of one being elevated above the other, and thus tends to preserve both health and figure. These advantages, however, are not incompatible with a slight slope, which most persons find favourable to speed in writing. An increasing number of teachers prefer a stroke with an inclination of about 80°.

1. Mulhäuser's.—Most copy-books offer certain mechanical aids, and of these aids there are two distinct kinds. One kind consists of lines ruled in such a way as to indicate the size of each letter, the space between the letters, and their proper slant (if any). This is effected by two sets of parallel lines crossing each other, the one set drawn horizontally to determine the length of the letters, and the other drawn obliquely to give the slope of the letters and their proper breadth. This mode of ruling a copy-book was devised by Mulhäuser, but in his system the lines were drawn at an angle of 60°, whereas in our day the angle ranges from 75° to 90°.



2. Locke's.—Another kind of mechanical aid to be found in some sets of copy-books consists of faintly-traced letters for the pupil to write over. The amount of traced writing should gradually diminish as the learner advances. "There is no royal road to learning," but this device certainly smooths the way at the beginning. It enables the learner to get the right training of his hand in shaping the letters before trusting it to the guidance of the eye.

This device of traced letters was first suggested by John Locke in his "Thoughts Concerning Education." It renders the task of learning to write less irksome to the beginner, whose progress in the early stages is seemingly rapid, but it is liable to some abuses and drawbacks. The children are apt to mark over the letters without actually writing them—without producing the strokes in the way that constitutes real writing—and unless the teacher is vigilant and careful to give the needed instruction at the commencement of each lesson, the young learners will form the habit of beginning certain letters at the wrong point and going in the wrong direction. They are also inclined to write too fast, and to take too little notice of the forms of the letters, for real improvement. Whilst then tracing has its uses, it must be sparingly employed.

3. Most Recent.—In the best copy-books recently constructed a judicious use is made of the two aids just described. In the early books of the series a small amount of tracing is introduced, and that amount is gradually reduced, whilst for some time longer certain guide lines are retained to help in determining the right size and slant of the letters and the space they ought to occupy.

MODE OF TEACHING.

It ought to be needless to remark that writing is a subject which must be *taught*. And the test as to whether writing is really taught, and taught under the directing mind of the Head Teacher is the uniformity of style throughout the school.

1. How to Begin.—For the attainment of success in the higher classes, it is highly desirable that the children should have nothing to unlearn in their course, that they should be accustomed from the first to form their letters of the same pattern as that to be adopted ultimately. If, for instance, *h* and *l* are to be looped in the end there is no good reason why they should be formed differently at the beginning; the end should rule the beginning; the shape of the letters in small hand should determine their shape in large hand. And since the older scholars will be expected to write each word continuously, or in current hand, it follows that the younger children should be trained to write without lifting the pen whilst forming a word. This consideration shows the necessity of choosing a set of copy-books in which the letters are so formed as to admit of this being done.

2. Instruction and Practice.—Whatever the style of writing to be taught, instruction and practice must be combined. And the question is what form shall the instruction take, and what relation shall it bear to the practice. Shall the instruction be based on the practice, or the practice on the instruction? Shall the instruction consist mainly of the correction of faults already committed, or shall it aim at the prevention of faults by previous explanation and direction? The answer to these questions is not the same in all cases and for all classes.

In an upper class instruction should take a less prominent part than in a lower one. When the scholars know perfectly well what to do and how to set about it, then practice with individual correction is nearly all that is requisite, then the instruction should, for the most part, be based on the practice and directed to the cure of individual defects. Only when some fault commonly prevails would it be necessary to call the attention of the whole class to its existence and to the mode of correcting it.

In a class of beginners, on the other hand, instruction should take the foremost place, and be addressed to the whole body, both at the beginning of the lesson, and at intervals throughout its course—at the beginning, to show clearly the form of a letter and the mode of forming it, and at intervals to draw attention to some prevailing fault. For the teaching to be available for the whole class, all its members must write from the same copy, and that copy must be set on the board in their presence.

3. Head-lines or None?—"Should we use copy-books with head-lines or without?" Beginners should have books, with suitable guide-lines only, so that the teacher may be free to follow his own course, and to adapt each copy to the special needs of his scholars, repeating any exercise as often as necessary. As soon, however, as the children have gone through an elementary course in this way, it is better, on the whole, to use copy-books with engraved head-lines. By this means a perfect copy is set before each child and at a convenient distance for perfect vision. But unless the scholars are thoroughly conversant with the work to be done, blackboard teaching must precede and supplement copy-book practice. And for the instruction to be effective it must be addressed to the whole class, all of whom must therefore write the same copy. To allow of this being done, children who have been absent must leave some pages blank. This is the chief objection to the use of copy-books with head-lines.

4. Correction of Faults.—The correction of faults forms an essential part of the instruction. Whilst the children are writing the teacher should make an individual inspection, leading each child to discover his own faults and showing him by neat pencil-marking how to correct them. The class should pause at the end of each line until the order has been given to proceed. In these pauses you will often have occasion to come to the board and illustrate some common fault. This you will do by writing the misshaped letter with the fault exaggerated, and at its side the letter in its correct form, the children being questioned, meanwhile, on the fault to be amended.

It is often found that the children copy their own writing instead of the model. To correct this tendency, the copy-book should be ruled lengthwise, to reduce the number of lines to be written, and the engraved copy should be repeated half-way down the page. To induce correct imitation you must insist on their writing with due deliberation. Slow and accurate work at the beginning is the surest way of being successful in the end. The children must be made to feel that what you value most is quality, not quantity, and until they can write a good hand no attempt should be made to gain speed.

GRADUATION.

1. **Pencil before Pen.**—Before being entrusted with pen and ink, the children should be well drilled in writing with pencil, either on slate or paper. Apart from the question of expense, paper and lead-pencil afford the best introductory practice to the use of pen and ink. It is true that the point of the lead-pencil will often be broken, but it is by that unpleasant experience the child learns the necessity of pressing lightly. Whichever kind of pencil be used, it must be sufficiently long to be held like a pen, and such attention should be paid to the proper mode of holding and handling the pencil that when the time is come for writing with ink, no great difficulty may be found in the proper management of the pen.

2. **Order of the Hands.**—Of the three hands—large, round, and small—which should we adopt in teaching beginners? We ought to select the hand which is large enough to show the formation of the letters plainly, and not too large for young children to cover the range of each letter without moving the hand bodily. Round hand between lines about one-third of an inch apart seems to fulfil these conditions. This should be followed by large hand, which shows better the defects of formation and imparts greater firmness of hand and command of the pen. The change to small hand must be very gradual, and special care taken to maintain a bold style. This is best done by using copy-books with large hand intermixed with small.

3. **Aids.**—Certain mechanical aids should be given to young children and afterwards gradually withdrawn. The first and second copy-books may have one or more lines in each page provided with traced letters for the pupils to write

over. On the introduction of capitals, also, a small amount of tracing is serviceable. But the best aid is that afforded by guide-lines to indicate the size, slant, and spacing of the letters, and this aid may continue to be given to a certain extent throughout the junior course (Standards I.—III.).

4. Order of the Letters.—Another important question, bearing on graduation, is the order in which the letters should be introduced. Assuming that the letters are to be formed in the beginning as in the end, they may be classified in this way:—

(1) Letters composed of short right lines, hooks and links—m, n, u, i.
(2) Letters composed of long right lines, hooks and links—t, p.
(3) Simple curved letters—o, a, d, q, c, e, s.
(4) Simple looped letters—l, h, k, g, j, y.
(5) Complex letters—b, f, r, v, w, x, z.

Each letter should be introduced separately in the above order, and then combined with letters already practised so as to form easy words. In this way the exercise is rendered more interesting to the young learners, who much prefer writing real words to detached letters or their arbitrary combinations. The order in which the capitals should be grouped will depend on the form adopted, but by the time they are reached, the child will have gained such a command of the pen as to render their particular order of comparatively small account.

USEFUL HINTS.—

(1) The Head Teacher should make a point of inspecting the copy-books periodically in the presence of the teacher and his class.
(2) Arrangements should be made for wiping the pens before putting them away.
(3) The children should be provided with blotting-paper and shown how to use it.
(4) They should be required to sit "square" at the desks, to keep their shoulders level, their bodies almost erect, and their head slightly bent.

USEFUL HINTS.—

(5) Short-sighted children should be placed in the front row.

(6) The teacher should mark the errors and enter any mark of merit neatly. Many a book is disfigured, and the writer discouraged, by a teacher's slovenly scrawl in marking.

(7) No scribbling on the covers or desks should be tolerated.

N.B.—The Head Teacher is recommended to keep a special book, called the "Champion Writer," in which each scholar who is proficient in penmanship should have the honour of entering a specimen of his workmanship.

CHIEF POINTS.—

1. The quality of writing in a school has a great influence on its reputation.
2. The chief marks of a good hand are legibility, rapidity of execution, and beauty of style.
3. The chief mechanical aids are traced letters and guide-lines.
4. Letters should take the same form in the lowest class as in the highest, and should be so formed from the first as to admit of each word being written without lifting the pen.
5. Blackboard teaching should precede and supplement copy-book practice, and all in the same class should, in the lower classes, write the same copy.
6. All common faults should be exposed and corrected on the board.
7. To check the tendency of children to copy their own writing instead of the model, the copy-book should be ruled lengthwise, and the model repeated half-way down the page.
8. Lead-pencil and paper should precede the use of pen and ink, great attention being paid from the first to the posture of the body and the right mode of holding the pencil or pen.
9. Round hand is best for beginners, being sufficiently large to show clearly the formation, and not too large for young fingers to write each letter without moving the hand bodily.

N.B.—For classification of the letters and useful hints refer to foregoing paragraphs in small type.

HOW TO TEACH SPELLING.

PRINCIPLES.

1. Our Aim.—As principles should govern practice let us first go in search of them. And first what is our aim or object in teaching spelling? It is to enable our pupils to *write* words correctly and particularly those in common use. Hence the fingers rather than the lips should be chiefly exercised in learning to spell, and the words written for this purpose should, as a rule, be taken as they occur in sentences. The old-fashioned way was to set columns of long words for the children to con over, and then to exercise them in spelling the same orally. Children thus taught were very apt to blunder in writing familiar words; but children accustomed to write words just as they come in a sentence get plenty of practice in spelling those most commonly used, and are guided by the sense in writing words sounded alike but spelt differently, as *there* and *their*.

2. Spelling by Writing.—We should also teach spelling by means of written exercises because the eye is more trustworthy than the ear. It is a matter of common experience that what is seen is more accurately remembered than what is merely heard; and this is emphatically true in respect to English words, which are so irregularly formed that their sound is often a poor guide to the right spelling. The common practice of writing a doubtful word to see if it looks right is clear evidence that the eye is the chief judge in determining the right spelling. Since the memory retains most surely what enters the mind through the eye, we should be careful to keep out of sight, as far as possible, all misspelt words. Therefore we should not exhibit the children's blunders on the board with the view of showing what to avoid, nor should we give passages with incorrect spelling for the pupils to rewrite correctly.

3. Spelling by Reading.—Orthography is learnt through the eye not only by writing but also by reading. A person who is constantly reading almost unconsciously learns to spell, for the power both of reading and spelling depends on the same faculty, namely, the visual memory for form; but the two processes differ much in point of difficulty. The general appearance of a word is a sufficient guide in reading it, but no one could spell it correctly without a precise knowledge of its parts and their sequence.

4. Practical Inferences.—From these considerations it follows: (1) That exercises in spelling should not commence till the child is able to read easy words with facility; (2) that no word should be introduced into the spelling exercise that is not familiar to the eye in reading; and (3) that a spelling task should be taken from the last reading lesson, not from the next.

STUDY OF SPELLING.

1. Word-building is one of the devices for teaching spelling, the merits of which have not yet, perhaps, been fully tested. It consists in taking some word or syllable and forming from it a number of words by making certain additions and modifications. This being done by the combined efforts of the teacher and the taught, the forms of such words are clearly impressed on the memory. Moreover, by carefully observing how such words are formed, the learner is aided in framing rules for making similar additions in other cases.

In illustration of word-building we may give the following examples:

(*a*) Forming words with a common ending to teach the powers of the consonants, as—ay, bay, day, gay, pay, ray; bray, dray, gray, pray; spray.

(*b*) Forming words to illustrate the different ways of representing the same vowel sound, as—
  (1) The long sound of *e* by *ea*, as in eat, beat, ear, fear.
  The long sound of *e* by *ee*, as in meet, feet, beer, peer.
  (2) The sound of *e* in "her" by *i*, as in girl, whirl, dirt, shirt, birth, mirth.

(*c*) Forming words to show how the addition of a certain syllable affects the spelling, as—
  (1) The dropping of *e* before -ing, as in love, loving; make, making.
  (2) The doubling of a single final consonant before *y* when preceded by one short vowel, as in sun, sunny; mud, muddy; fog, foggy.

2. Word-grouping is closely allied to word-building and consists chiefly in bringing together words of similar structure in the hope that the spelling of a whole class of words will be more easily remembered by thus associating them. We may group together, for instance, words having the same peculiarity, such as those having the sound of *u* represented by *o*, as in word, work, worth, other, mother, Monday, London; or words with the same silent letter, as knee, knit, knot, knob, knock, knight.

All lessons in word-building and word-grouping require a copious use of the blackboard. Sentences should be given to illustrate the use of the words under consideration unless very familiar. And the instruction should be fixed by the children copying the words and sentences from the board, or, if capable, writing similar sentences of their own composing.

3. Homonyms, or words pronounced alike, but differing in meaning and generally in spelling, are also best dealt with in sets, *e.g.*, fain, fane, feign. The difference between such words can only be taught by means of sentences, the teacher first giving examples of their use on the board, and the scholars afterwards putting them into short sentences of their own on paper.

However defective and incomplete word-building and word-grouping may be as a device for teaching English spelling, on account of its anomalous character, there is no doubt that, in the hands of a capable teacher, this mode of teaching helps the learner along the way towards the goal, although it fails to take him all the way, that it exercises his intelligence, and makes the task of learning to spell less irksome.

TRANSCRIPTION.

1. Its Value.—This is an exercise in copying a passage given in script or print, and is one of the most effective ways of teaching spelling. No child can copy a sentence correctly without observing the words with minute care and concentrating his attention on the work. The best way to fix on the mind the details of what we see is to reproduce them in some form. This is what the child does in transcription, and if his copy is correct it is a sure sign that his observation has been accurate.

Transcription is far superior to the old practice of setting children to learn off their spelling from books by dint of silent repetition. Instead of being a distasteful, monotonous task, it is an interesting exercise, giving full employment to the children's eyes and fingers, a form of activity that they keenly relish.

It is of most service in the lower classes, serving as an introduction to writing from dictation, for which it is a capital preparation. Like dictation it affords plenty of practice in writing words commonly used, and in learning to distinguish between words similarly sounded but differently applied, like "is" and "his," "as" and "has," "were" and "where." In fact, it compels attention to *all* the words, little and large.

2. How to obtain its full Value.—To get the full value out of this exercise it is necessary to insist on perfect accuracy. But accuracy is a difficult attainment even when nothing more is necessary than copying what is before one's eyes in plain print. The attention of the young writer has only to wander for a moment or two, or he has only to fail now and then in looking minutely at his copy, for an error to creep in. Knowing this you will be patient and considerate in dealing with blunders; but knowing also that the value of the exercise depends entirely upon its accuracy, you will take steps for getting a perfect copy, and that not only of the spelling but of the capitals and stops. The pieces for transcription should, therefore, not be too long; and they should be selected from what the children have previously read, so that they may understand what they have to copy, and thus have food for the mind as well as employment for the eyes and fingers.

It is also necessary, in order to secure its full value as an exercise in spelling, to make the children feel that they must learn to spell the words as they write them. And to insure that this is done, each child must be asked to spell a word or two whilst the teacher is going round examining their work. The quality of the writing also must receive due attention.

NOTE.—*Unless the exercise is carefully examined and corrected—that is, actually set right—it may do more harm than good, for the habit of carelessness will be strengthened and the erroneous spelling more firmly fixed on the memory.*

DICTATION.

1. Preparation required.—This exercise in the hands of some teachers is a mere test of spelling, but, if properly managed, is a most effective device for teaching it. To serve this purpose the class must first have an opportunity of preparing the spelling. It is better to prevent the occurrence of errors by previous preparation than trying to remedy the evil by subsequent correction, for an error once made has a tendency to recur. "Prevention is better than cure." The chief aim of the teacher should be to clench the correct spelling already learnt. But as a dictation exercise brings inaccuracies to light and opens the way for their removal, it serves both to impress the true and correct the false.

The preparation in a lower class may take the form of a transcription exercise, the same passage being taken on the following day for dictation; or the hard words may be written on the board and copied by the children just before the dictation is given. In an upper class the preparation should not be confined to the actual passage for dictation, but should extend over one or two pages from which the passage is to be taken, the scholars being required to write out a list of the words they think themselves most liable to misspell. Preparation may take a variety of forms, but preparation there must be, if the exercise is not to degenerate into a mere exhibition of the children's ignorance. In dictation, as in all other parts of school work, it is better to prevent the commission of faults than to spend effort in their correction.

2. Exercising the Intelligence.– Another principle to act upon constantly is to teach a subject in the way that best conduces to intellectual training. The dictation lesson may be so conducted as to help materially in the formation of good mental habits. It is an exercise that demands careful listening, the accurate recollection of the words dictated, constant thought as to the correct spelling, promptness in writing the dictated words, close scrutiny of the words when written, with alertness and fixed attention throughout.

These advantages only accrue under good discipline. The children must sit facing the teacher, and fixing their eyes on him when not actually writing, no one daring to look over his neighbour's paper. But even a good disciplinarian sometimes fails to make the lesson an exercise of intelligence, (1) by omitting to read the whole passage before beginning to dictate, (2) by giving out shorter phrases than the children with a fair effort are capable of remembering, and (3) by repeating each phrase unnecessarily. The entire passage should be first read, because the apprehension of the general sense gives scope for thinking, helps the listener to catch the words dictated, and sometimes acts as a guide to the spelling. The portions dictated should be of fair length to strengthen the children's power of memory, and for the same reason they should not be repeated without good cause. To avoid the necessity of repetition let the teacher and his pupils *look at each other* whilst a phrase is being dictated, and let the former enunciate his words distinctly, without, however, modifying the accustomed way of speaking to suggest the right spelling.

3. Marking Mistakes.—Ample time should be left for the marking and correction of errors, or else the whole exercise may only serve to perpetuate them. In a class of young children the teacher himself must mark the errors whilst they are otherwise employed. But except in the lower classes, it is better, when the scholars are numerous, to allow them to mark either their own or each other's errors. For this purpose a book containing the passage dictated should be given to each child, or the words in succession spelled aloud by the teacher.

In favour of each child, in a well-disciplined school, marking his own exercise, when it is on paper and every alteration is counted as an error, it may be said: (1) that the writer will derive most benefit from scrutinising his own work, (2) that all misspelt words, except his own, are kept out of his sight, (3) that all tendency to carelessness or dishonesty can be checked by the teacher glancing at each exercise and thoroughly examining five or six. When mutual correction is the method adopted the dictation books should be changed in such a way that no scholar has his exercise marked by the one that sits next to him, so as to prevent the writer from dividing his attention between his own book and the one he has to mark.

4. Correcting the Errors.—Then comes the most important part of the whole lesson, that is, the actual correction of the errors, which is done by each pupil writing his misspelt words in correct form, with the aid of the book from which the exercise was taken. And, lastly, to efface the false impressions made by the errors, and to fix the right spelling in the mind, each corrected word should be written five or six times.

5. Neatness of Writing—Nor should the quality of the writing be lost sight of, either by teacher or pupil. If only in the interest of correct spelling it would be wise to insist on neat penmanship, for no clear impression of the right spelling can be left upon the mind if the words are written in a blurred and careless style. To induce the scholars to take pains with their writing, it is advisable to have the exercise written in a book kept for the purpose, and when dictating to allow sufficient time for the words to be penned with care and pains.

SPECIAL EXPEDIENTS.

1. Need of Variety.—Much of the interest in teaching arises from the exercise of the teacher's ingenuity in devising methods of his own for keeping up the interest of his scholars and winning their willing co-operation. The best method fails to effect its purpose when it becomes mechanical and monotonous, and it is sure to become so unless the teacher brings a little independent thought to bear upon his work. Among the ways of varying the spelling lesson the following are worth considering:—

(1) For the transcription exercise the class may be required at times to write down from their reading-lesson all monosyllables of more than four letters, or all words of two syllables, or the names of objects, or words ending in y or ing.

(2) An oral exercise may be given in spelling *phrases* just as they come in the reading-lesson.

(3) A class of words, as the names of articles sold by the grocer, or common flowers, or trees, or military terms, may be written on the board, copied, and afterwards dictated.

(4) A list of words commonly misspelt may be compiled by the teacher and copied by the scholars in their note-book.

(5) The dictation exercise, at times, may be on the words misspelt in previous dictation lessons.

(6) Sometimes the exercise may turn on a spelling-rule and its exceptions.

2. Competitive Exercises.—At rarer intervals should be given competitive exercises in spelling, which might take the form of "spelling-matches" or "spelling-bees," both of which will be found agreeable diversions, the former suited to the end of a week, the latter to the end of a term or half-year.

For a *spelling-match* the two best spellers in the class are appointed by the teacher to "pick up" sides, and the object of the game is to see which side can score the highest number of marks. To get the most good out of this expedient for teaching spelling, it must be announced a few days before the match from what pages of the reading-book the words are to be taken, or to what class of words the competition is to be limited. On the appointed day the two sides being marshalled in parallel lines under their respective captains, the teacher reads out the rules of the game drawn up by himself, and the competition begins under his supervision and umpireship.

A *spelling-bee* is a competition in which the scholars spell in rotation the words proposed by the teacher on the understanding that the one who is "bowled out" last shall receive a prize. When a competitor misspells a word he stands aside, and thus gradually the number competing dwindles. The excitement grows as the number left in diminishes. Meanwhile the words proposed increase in difficulty, until at last all are out except one—the winner of the prize. To make this an expedient for teaching spelling at least a week's notice of your intention must be given, and the book mentioned from which the words shall be taken. You must, however, reserve the right to take any word from the dictionary to decide between the merits of any scholars that cannot be caught out by any word in the given book.

CHIEF POINTS.—

1. Spelling should be taught through the eye rather than the ear, and chiefly by means of written exercises.
2. Exercises in spelling should not begin till the child is able to read easy words with facility, and should always consist of words already familiar to the eye in reading.
3. Word-building is a good device for teaching spelling, so far as spelling in our language is subject to law and order; it exercises the learner's intelligence and makes his task less irksome.
4. Transcription is a most effective method of teaching spelling:
    - (*a*) It necessitates close observation of the words to be written.
    - (*b*) It compels attention to all the words little and large.
    - (*c*) It is an interesting form of instruction to children, who delight in using their eyes and fingers.
    - (*d*) Perfect accuracy must be insisted on, or it may do more harm than good.
5. Dictation is a capital device for teaching spelling if rightly managed.
    - (*a*) There must be previous preparation on the principle that "Prevention is better than cure."
    - (*b*) It serves to impress the true and correct the false, and it greatly helps in the formation of good mental habits.
    - (*c*) In dictating follow these rules:
        - (1) Face the children and require them when not writing to fix their eyes on you.
        - (2) First read out the whole passage.
        - (3) Then dictate in portions of fair length.
        - (4) Avoid the necessity of repetition.
    - (*d*) Leave ample time for the marking and correction of errors, or else the whole exercise may only serve to perpetuate them.
    - (*e*) In short, the dictation must be well prepared, clearly dictated, and thoroughly corrected.

HOW TO TEACH ARITHMETIC.

ITS PLACE IN EDUCATION.

1. Its Double Claim.—Arithmetic has a double claim to a foremost place in the work of an elementary school; it is of great service in practical life, as in buying and selling, in making and building, and at the same time a valuable instrument of education. This arises from the fact that arithmetic is both a science and an art. As an art it treats of certain rules and their applications; as a science it deals with the principles that underlie the rules. One object, then, of teaching arithmetic is to give skill in computation, to enable our pupils to work out results with promptness and despatch combined with accuracy. The other object to be kept in view is to train the mind whilst giving practical skill.

2. As a Mental Discipline.—As a means of disciplining the mind arithmetic has a high value, and from this point of view is as important a subject for girls as for boys. It helps to form the habit of concentration of thought and fixed attention, for any wandering of the mind is the fruitful source of error and the cause of much painful effort in the endeavour to get straight again. It gives practice in clear and exact statement and logical arrangement. It exercises the reasoning powers in proceeding by careful, cautious steps from premisses to conclusions, from what is given to what is required.

As arithmetic is to be taught with a double object in view—practical skill and mental training—the pupil must learn not only what to do, but why it is done. Fortunately, the two objects by no means clash with each other, but rather are mutually helpful. The rapidity and accuracy of thought required to make a ready reckoner helps to produce that alertness of mind which marks the educated man; whilst the power to see one's way through an arithmetical problem, and to know what rules to apply, can only come by a clear understanding of the principles on which the rules are grounded. When mental training is made the great object, the progress may be slow, but in the end far more will be accomplished even in respect to practical results; for the child that is properly taught not only gains knowledge but the power to apply it. In no subject of the elementary school is it more necessary "to make haste slowly."

3. **Periods of Mental Growth.**—There are three distinct stages to be observed in the method of teaching arithmetic answering to three well-marked periods of mental development, which roughly speaking may be taken to correspond with the following ages: (1) below seven years of age, (2) between seven and ten, (3) above ten.

Children of course differ widely in the rate of development, but speaking generally, when below seven they can only apprehend knowledge in its concrete form. Then, accordingly, is the time for forming ideas of things within the range of their senses. We learn best by *doing* at any time, but at this early period it is by far the most effective way of gaining knowledge.

The succeeding period—that between the ages of seven and ten—is the best time for gaining facility in the more mechanical processes of instruction, such as, fluency in reading, the formation of a good hand in writing, the attainment of readiness and accuracy in working the fundamental rules of arithmetic.

From ten upwards the reasoning faculty manifestly gains power, and should, therefore, be appealed to with increasing frequency. This is the time, accordingly, for the full investigation of the principles which underlie the rules of arithmetic.

Let us now consider the kind of teaching most suitable for each of these periods, dividing the work into three stages: the infant stage for children below seven; the junior stage for those between seven and ten; and the senior stage for those above ten.

INFANT STAGE.

1. Chief Aim.—The worth of knowledge, in enriching the mind and increasing its powers, depends much upon the way in which it has been gained. Teachers, formerly, did not often trouble themselves about how a child learned a thing so long as he learned it, but we have come to see that the effect on his mind and his ultimate success are much influenced not so much by the amount of his knowledge as by the way he has acquired what he knows.

One mind may be packed with knowledge with little power of applying it, another less bountifully furnished may have considerable power of using wisely what it has. A child that is properly taught arithmetic may make little apparent progress during the early years of his school life, but what he learns bears a rich fruitage in after-days. "One sows and another reaps." The "infant teacher" must be content to prepare the soil and sow the seed with a liberal hand. It is for her to give the children true ideas of small numbers and the relation between them, and the power to perform simple processes with a clear insight into their nature and purpose.

2. "Number Pictures."—Only small numbers should be used in the early lessons, and they should always be presented in concrete form. "Number pictures" on sheets have been prepared for this purpose. They consist of squares forming a certain pattern and drawn to scale. Each number having its own pattern, the children associate the number and its pattern in their minds, and thus form a clear mental picture of each number thus represented. But as in teaching little children the hand should be occupied as well as the eye, each child should be provided with coloured square tablets for them to arrange like the "number-picture" on the sheet. If the system of teaching is based on the ball-frame, then the children must on the same principle be provided with small frames, on which to perform the same operations as the teacher on the larger frame. In any infant class hand and eye must work together.

3. Components of Numbers.—The children, having learned to count up to ten and to represent these numbers in some such way as that described, should next be made conversant with their component parts and thus learn to decompose numbers with facility. It is in this way children are best trained to think, and to add and subtract without recourse to their fingers or counting by ones, a practice so mechanical and so detrimental to sound progress.

As an example of the method of teaching the components of numbers let us take a lesson on the number five. Each child being provided with five tablets he is instructed to arrange them, in imitation of the teacher, so as to show (1) that 5 = 1, 1, 1, 1, 1; (2) that 5 = 2, 2, 1; (3) that 5 = 3, 2; and (4) that 5 = 4, 1. He is then directed to write these results on his slate, the teacher showing on the blackboard how it is to be done:—

× 1			
× 1	×× 2	××× 3	×××× 4
× 1	×× 2	×× 2	× 1
× 1	× 1	—	—
× 1	—	5	5
—	5	—	—
5	—		
—			

Then would follow a variety of exercises in adding and subtracting numbers not exceeding five in the aggregate.

4. Graduation.—Success in teaching arithmetic to little children can only be attained by the most careful graduation. The work must be divided into easy stages so as to present but one difficulty at a time. Success must be measured, in the early stages, by the growth of the children's power to add and subtract numbers without actually counting one by one. And the growth of this power will be much promoted by an early familiarity with the components of ten, and with the sum of ten and any other number up to nine. In fact ten should be regarded as a fixed number post from which to reckon.

In the Infant School no number above 99 need be taught. Within that limit there would be three distinct stages: (1) Numbers from 1 to 10; (2) numbers from 10 to 19; (3) numbers from 19 to 99. And at each stage there would be five things at least to teach: (1) How to count and represent the numbers by means of balls, beads, tablets, sticks, or any other handy things; (2) how to read their symbols; (3) how to write them in figures; (4) how to find their components; (5) how to add and subtract numbers within the given range. In adding numbers whose sum is above 10 the children should be taught to add them by reference to 10 or one of its multiples, for instance:—

$$8 + 9 = \overline{8 + 2} + 7 = 10 + 7 = 17$$
$$12 + 7 = 10 + 7 + 2 = 17 + 2 = 19$$
$$27 + 9 = \overline{27 + 3} + 6 = 30 + 6 = 36$$

It is not meant that the children are taught to write down the different steps in this way, but this is intended to show the mental process by which the result is to be obtained.

5. From Concrete to Abstract.—To proceed from the concrete to the abstract is, as we know, a standing law in teaching, and therefore one that is applicable to the teaching of arithmetic. It follows that we should at first present all numbers in concrete form but gradually accustom the children to number in the abstract. This can best be done by speaking of numbers first of all, and for a long time, in reference to objects close at hand; secondly, by reference to familiar objects not present, as cows and horses; thirdly, by speaking of numbers apart from objects, as four and five. As in the first lessons numbers should always be mentioned in reference to objects close at hand, it may be asked, "Should children be allowed to count with the aid of their fingers?" There is no objection to this practice in early days, as a matter of principle, but it is inexpedient to let little children form the habit, as they are very apt to continue the practice when the time has come to deal with numbers in the abstract and to dispense with all such mechanical aids.

JUNIOR STAGE.

1. **Chief Aim.**—The principal aim at this stage should be to secure neatness, accuracy, and expertness in working the four fundamental rules, whilst cultivating the learners' general intelligence both in understanding and applying them. The children's success in solving little problems may be taken as the measure of the teacher's success in training their minds. It is no small matter to give them practical skill in working sums according to rule, but it is worth still more to give them, within the range of their powers, an insight into the nature of the processes and the principles on which they are based.

2. **How to teach the Rules.**—The power of understanding the rules depends almost entirely on a clear apprehension of the "place value" of the figures in the numbers used. Before the young learners have grasped this idea it is impossible for them to really understand any written operations with numbers exceeding nine in the aggregate. Ability to read and write small numbers of two or three figures, and to indicate the value of each figure by some concrete illustration, is absolutely indispensable before beginning the formal rules of arithmetic.

The practice of working small sums orally is also of great service as a precursor of written arithmetic, for it affords a clear view of the nature and object of the several processes by that best of all teachers, actual experience. Hence children should be accustomed to add and subtract orally long before they are troubled with working the corresponding rules on slate or paper.

Concrete illustrations have still an important function to perform, though not to the same extent as in the Infant School. Their function, at this stage, is not to assist the children in calculating, but to enable them to see for themselves the method to be followed in working the four fundamental rules, simple and compound. Nor is it any longer necessary that each child should be provided with apparatus, such as a little ball-frame, to do with his own hands what he sees the teacher do. By means of sticks, some taken singly, others in bundles of ten and a hundred, the teacher can lead the young learners to form the four simple rules as the result of direct observation. The compound rules can be taught on the same lines by the substitution of coins for sticks (counterfeit coins for this purpose can now be bought at any kindergarten warehouse).

3. **How to teach the Tables.**—The teacher who aims at cultivating the intelligence of his scholars will not only help them to find out the rules for themselves, but will lead them to construct their own tables before committing them to memory. To set children to learn a table by rote before it has been built up in their presence with the aid of the ball-frame, or other visible means of demonstration, is to be guilty of an unpardonable fault in teaching—the substitution of blind rote-learning for the guiding light of the understanding.

Take, for example, the four times table as an illustration of the right method. By means of the ball-frame lead the children to discover the sum of four twos, then write four twos on the board in the form of an addition sum and show that the same result is obtained. Proceed similarly with four threes, four fours, etc., and as each result is obtained write it on the board in tabular form. Then turn the board and direct the children to construct the table on their slates. When their work has been examined and corrected, let them fix it on the memory by dint of repetition.

4. **Exercises.**—Although every reasonable effort should be made to train the minds of children at this stage by helping them to frame their own rules, to construct their own tables, and to solve easy problems, it would be foolish to neglect the working of sums rapidly by rule for the attainment of practical skill. Apart from their practical utility, such exercises may be made of no small educational value to the young learners, on account of the rapidity of thought, the fixed attention, and constant care requisite to obtain correct results expeditiously, to say nothing of their moral effect in promoting honesty and self-reliance when conducted by a competent disciplinarian. To speak slightingly of such exercises as merely mechanical is to mis-describe them.

SENIOR STAGE.

1. **Need of Illustrations.**—There is still plenty of scope, in this higher stage, for the use of concrete illustrations, not of course as an aid to calculation, but as the means of giving clear ideas of what is taught. Thus in a class learning the weights and measures, the pupils should have an opportunity of seeing those in common use and, as far as practicable, of actually weighing and measuring. We learn best by *doing* at any stage, although it is not so essential in the higher classes as in the lower.

Most of the visible illustrations at this stage take the form of diagrams on the blackboard. In learning fractions, for instance, a class is much assisted in understanding the subject by well-drawn diagrams. Only remember, they must be *well-drawn;* if they are to aid in giving clear and correct ideas they must be drawn accurately.

2. **Teaching a new Rule.**—In trying to teach little children the reasons for rules we have often to be satisfied with a glimmering of our meaning, but on reaching this stage, the learner should be able to make a thorough investigation

of the principles underlying the rules already learnt, and with one or two exceptions those yet to come. In teaching a new rule it is inverting the right order to enunciate the rule, and having worked a sum by it to prove that it is right. The learner should be put on the track of discovery, and arrive at the rule as the result of his own exploration.

The method to be followed, at this stage, may be thus formulated :

(*a*) Give oral exercises gradually increasing in difficulty to explain the nature and object of the rule, and to give a clue to the rule itself.

(*b*) Analyse the process involved in doing these sums, working the last done mentally on the blackboard.

(*c*) Work one or two similar examples with larger numbers on the same plan and then deduce the rule.

(*d*) Apply the rule to other well-graduated examples working them out on the board.

(*e*) Exercise the class in doing sums of the same type on paper.

3. Exercises.—It is well in the early exercises on a new rule to give a good number of short exercises irregularly formed and variously expressed rather than those symmetrically formed sums that involve long columns of figures in the course of working out, and that succeed each other in such a stereotyped form as to present no new point for thought by a change in the wording of the question. It used not to be at all uncommon for a class to be able to multiply a large sum of money by a high number, and to be quite unable to find the price of a few pounds of cheese at some few pence per pound. But teachers should always be on their guard, in adopting a new method, against discarding what was good in the old. Our endeavour should always be to combine the good in both. Whilst then giving numerous sums with small numbers, and avoiding monotony in their form and character, it is a wise thing occasionally to set long sums, for in working them out it is impossible to arrive at a correct result without sustained attention, patient labour, and continuous thought.

MENTAL ARITHMETIC.

1. Its Value.—"The object of this exercise," according to the Instructions to H. M. Inspectors, "is to encourage dexterity, quickness, and accuracy in dealing with figures, and to anticipate, by means of rapid and varied oral practice with small numbers, the longer problems which have afterwards to be worked out in writing." This oral practice, when kept in advance of the written exercises, is also an excellent means of preparing the children for the study of the formal rules of arithmetic, enabling them with a little help from the teacher to discover the rules for themselves. Mental arithmetic, in brief, trains the mind to quickness, elasticity of thought and general alertness, whilst helping the learner to understand the rules of arithmetic and to apply them with facility.

Mental arithmetic has its own special rules, and these should not be entirely neglected because formerly their value was exaggerated. But, no doubt, it is generally best for the oral exercises to be of the same nature as the written, differing only in the smallness of the numbers and the shortness of the working. It should, however, be remarked that, quite apart from the special rules of mental arithmetic, the mode of calculating in the mind does not always follow the same order as on paper; on paper we take the units first, but mentally they should be taken last.

Thus, in adding 27 and 39 we should say 27 and 30 are 57, 57 and 9 are 66; in multiplying 127 by 4 we should say 4 times 100 are 400, 4 times 20 are 80, making 480, and 4 times 7 are 28 making 508.

2. How to Obtain its Full Value.—That mental exercises may yield the best fruit of which they are capable, it is necessary to take them regularly, to occupy not more than ten minutes at a time, but during that time to work at tolerably high pressure, the questions being short and sharp, the teacher's manner bright and brisk. Nor will the exercises yield their full value unless the teacher proceeds on some definite plan; unless he draws up a scheme of lessons for his class, and at each lesson arranges his questions on some principle, instead of leaving them to the inspiration of the moment, which often leads to that haphazard questioning so prejudicial to an orderly habit of thinking and all progressive teaching, to say nothing of the weakening of the children's respect for their teacher on witnessing his aimless efforts.

A few examples may be here given of connected questioning:

(*a*) The constant addition or subtraction of the same number, say four. The teacher gives the starting number to which each child adds or subtracts four as the case may be, as 3, 7, 11, 15, 19, &c.; 30, 26, 22, 18, &c.

(*b*) Another form of the exercise is to set for addition and subtraction a series of numbers alike in the units, as 6+4, 16+4, 26+4, &c.; 6—4, 16—4, 26—4, &c.

(*c*) Or each question may be built on the preceding answer, as 14 and 7 are 21; twice 21=42; 42 from 100=58; half of 58=29, &c.

(*d*) Money transactions are always interesting to children as they serve to give an air of reality to the work. The questions might turn on one particular coin, as a shilling, which should be divided into parts, reduced to other coins, spent in various purchases, the amount of change on each transaction stated, &c.

PROBLEMS.

The term "problem" is sometimes applied to concrete examples of any kind, but a problem may more properly be defined as "a question requiring the application of more than one rule, and demanding some thought in discovering the rules to be applied." When problems are set with the view of teaching, not testing, they should be arranged in sets, according to type, and sufficient practice should be given in solving those of one type before taking the next. The first sum of each type should be worked through on the blackboard and left there as a model for the pupils to follow.

In dealing with a problem the children have first to get a clear understanding of its terms and conditions, and this they may be aided in getting by a few judicious questions on what is given and required. Secondly, they have to settle the plan of operations, and this they can discover most easily by substituting small numbers for those given in the question. Thirdly, they have to set out the solution in steps with a clear explanatory statement. The educational value of the exercise depends more upon this than upon finding the right answer, for clear thought and an orderly arrangement usually go together, each tending to produce the other. The statement may take one of two forms; either the working and explanation may be combined or kept separate. The former is the easier, the latter the more lucid and logical, as the following example will show:—

James was sent to a shop with a sovereign and told to buy ½ lb. of tea at 1s. 9d. and 3 lbs. of sugar at 1¾d. How much money has he to bring back?

First Method.—

s. d.
2)1 9
———
10½ cost of tea
5¼ ,, ,, sugar
———
1 3¾ money spent

d.
1¾
3
———
5¼ cost of sugar

£ s. d.
1 0 0
1 3¾
———
18 8¼ money left
═══

Second Method.—

$$\begin{array}{ll|l}
\text{Tea cost} & \dfrac{\overset{\text{s.}}{1}\ \ \overset{\text{d.}}{9}}{2} = \overset{\text{d.}}{10\tfrac{1}{2}} & \\
\text{Sugar cost} & \overset{\text{d.}}{1\tfrac{3}{4}} \times 3 = \overset{\text{d.}}{5\tfrac{1}{4}} & \begin{array}{rrr} \pounds & \text{s.} & \text{d.} \\ 1 & 0 & 0 \\ & 1 & 3\tfrac{3}{4} \\ \hline & 18 & 8\tfrac{1}{4} \\ \hline \end{array} \\
\text{Money spent} & = \overset{\text{d.}}{10\tfrac{1}{2}} + \overset{\text{d.}}{5\tfrac{1}{4}} = \overset{\text{s.}}{1}\ \ \overset{\text{d.}}{3\tfrac{3}{4}} & \\
\text{Money left} & = \pounds 1\ \ 0\ \ 0 - \overset{\text{s.}}{1}\ \ \overset{\text{d.}}{3\tfrac{3}{4}} = \underline{\overset{\text{s.}}{18}\ \ \overset{\text{d.}}{8\tfrac{1}{4}}} &
\end{array}$$

N.B.—The first method is best for the younger children, the second for the elder.

Problem work is certainly difficult, but it should be taken in hand as soon as the children have mastered two rules. It has the advantage of being both a good mental training and a capital preparation for practical life, in which the calculations required usually take the form of little problems. A practical turn should be given to most of the problems set, and care taken that the terms of the question are in accord with the facts of life; if, for instance, prices are mentioned in the question they should tally with those in actual business. Children are delighted with anything that bears the impress of reality upon it. Nothing will so well bring home to them the value of arithmetical work as the solution of problems bearing upon the actual affairs of life.

PRACTICE ON THE RULES.

One of the chief aims in teaching arithmetic is to train our pupils to become "ready reckoners," to train them to work the different processes with rapidity and accuracy.

Accuracy is the product of many factors: one of them is a thorough understanding of the processes and an intimate acquaintance with the necessary tables and rules. Another factor is the habit of concentrating attention on the work in hand, a habit that is rooted in order and discipline. A third condition of success in attaining accuracy is not, perhaps, so obvious, and that is neatness of writing and clearness of arrangement in setting down the working. When the figures are ill made and ambiguously placed errors are bound to creep in. A confused arrangement is certainly a prolific source of inaccuracy. The teacher's style of writing and arranging on the board should therefore serve as a model for his scholars. It is pretty evident that a slovenly and confused arrangement on the board is typical of the state of mind which it tends to produce in the pupils. And, lastly, accuracy is the outcome of careful and conscientious correction.

Correction means much more than marking the exercises right or wrong. The essential thing is to trace each error to its source, and to find out if it proceeds from carelessness or ignorance, so that each pupil may receive just the help which he needs. Unless you discover where and why the sum is incorrect, the same error is apt to be repeated and confirmed. And remember that in dealing with "number" there are no degrees of accuracy. If we want to get out of arithmetic its full value as a means of training in precision, we must not be satisfied with anything short of perfect accuracy. From this point of view the remainder is of as much consequence as any part of the answer.

Rapidity is, of course, less important than accuracy, and is therefore not to be encouraged at its expense. But the two things are really not incompatible. It might be thought that quick work was fruitful of error, and that to be "slow" was the way to be "sure"; but experience shows that the child that is slow in calculating and writing down results is very apt to blunder, for the longer the operation takes the greater the strain on the power of attention. Quickness and alertness are close companions. It is, therefore, in the interest of accuracy to encourage speed so far as that is consistent with steadiness. "Slow and steady wins the race" is a good old proverb, but it is somewhat antiquated; now-a-days "swift and steady" is the winning colour.

The following are some of the ways in which rapidity may be promoted:

(*a*) Mental arithmetic is ancillary to quickness in calculating and should form a part of every lesson in arithmetic.

(*b*) Sometimes mental work may be combined with the use of the blackboard: the data are written on the board, the class arrive at the results mentally, and write them down as soon as attained. One of the best exercises of this kind is what is known as "Tots," or long addition sums.

(*c*) Sometimes it is well to write a number of sums on the blackboard and set a time-limit, making it the object of the class to see which can get the greatest number right in the given time. The time given should admit of neat workmanship, which should be regarded as an essential condition of success.

(*d*) Occasionally, however, a class-match might be held in which success was measured wholly by the number of correct answers without regard to the mode of working. In this case any abbreviated method should be permitted. This kind of exercise is only practicable in a small class—or small section of a large class—and in the hands of a strong disciplinarian, quick to detect copying.

Copying needs but a brief notice, as every teacher must be deeply impressed with the necessity of its prevention, in the interests of honesty, self-reliance, and real progress. It must be taken for granted that some members of the class will be sure to copy, if they have the chance, and that the dullest children are often the most adroit at the practice. Such arrangements must, therefore, be made as to reduce the temptations to copy, and the possibility of doing so,—which practically is the same thing—to its lowest point. Success in this, as in so many other parts of school work, is chiefly a question of vigilant discipline.

CHIEF POINTS.—

1. Two objects in teaching arithmetic—to train the mind and to give skill in computation.
2. Three periods of mental aptitude.
   - (*a*) Below seven—the time for learning by direct observation and using the fingers.
   - (*b*) Between seven and ten—the time for gaining facility in the more mechanical processes of instruction.
   - (*c*) Above ten—the time for appealing more and more to the reasoning faculty.
3. Infant Stage.
   - (*a*) Chief aim—to give ideas of numbers and their relations and the power to perform simple processes intelligently.
   - (*b*) Only small numbers should be used and at first in concrete form only.
   - (*c*) Hand and eye must work together, each child having its own little ball-frame or coloured tablets, etc.
   - (*d*) Adding and subtracting should be learnt by means of the components of numbers, *ten* being used as a fixed number post from which to reckon.
4. Junior Stage.
   - (*a*) Chief aim—to secure neatness, accuracy, and expertness in working the four fundamental rules, simple and compound, with an insight into their principles.
   - (*b*) A firm grasp of the principle of Notation is the first essential condition of success in understanding the rules.
   - (*c*) Oral practice is the best precursor of written arithmetic.
   - (*d*) Concrete illustration is still required, not as an aid to calculation, but in helping children to form the rules as the result of direct observation.
   - (*e*) Tables to be constructed by the children under the teacher's guidance before being learnt.
   - (*f*) The mere working of sums, according to rule, is not only of practical utility but of educational value.

CHIEF POINTS.—

5. Senior Stage.
    - (*a*) Concrete illustrations are still required for imparting clear ideas of what is taught.
    - (*b*) These illustrations mostly take the form of diagrams on the blackboard, and must be *well* drawn to effect their purpose.
    - (*c*) Directions for teaching a new rule. *See* small type p. 113.
    - (*d*) Set, for the most part, short exercises irregularly formed and variously expressed.
    - (*e*) Occasionally, set long sums for training the children to sustained attention, patient labour, and continuous thought.

TEACHING OF ENGLISH.

What is taught at school should grow out of the knowledge gained outside its walls, or at least be associated with it. This is peculiarly true of instruction in English. The child comes to school with the power of using his mother-tongue so far as to make known his wants and wishes. The teacher has not to begin at the beginning; the child has already learned from his mother and home-friends how to communicate his ideas, and that not in single words but in full-formed sentences. In his language lessons the teacher must recognise this important fact, and remember that he has to build on this knowledge and to make full use of it. He must also bear in mind that no language is constructed according to the rules of grammar previously formed, but that the rules are always deduced from the language.

The teacher has of course to conform to the scheme of instruction laid down for him by those in authority, but if free to choose he should, in teaching children under nine or ten years old, be more intent on increasing their knowledge of words and their command of language, than in plaguing them with grammar rules and definitions. Exercises in oral composition, or the power of giving verbal expression to familiar ideas, should form the bulk of the early lessons in English. The teacher should endeavour to carry on the same natural process of teaching the language that the mother has instinctively adopted in educating her child, and this he can do by means of conversational lessons on surrounding objects and matters of common interest. This being premised, we will proceed to offer a few suggestions on the method of teaching English through lessons in Grammar and Composition.

GRAMMAR.

1. Object of the Study.—"What is the good of learning Grammar?" is a question that one scholar not seldom asks another, with a spice of bitterness in the tone; for it often seems to children only devised to give them useless trouble. Boys and girls naturally dislike any study that seems to them of little use. We must, therefore, take them into our confidence, and try to get them to look at the matter from our point of view.

The older children, at any rate, will readily admit that it is a good thinking exercise, and they can be led to see that as we strengthen our limbs by exercise in drill and in games, so we may strengthen the mind by any study that leads us to put forth our mental powers. And it ought not to be difficult to convince them that grammar, which deals with the function and relation of words, will give them a clearer insight into the meaning of what they read; especially when the Analysis of Sentences forms a prominent part of the instruction.

It may be true that "one no more learns to speak by the rules of grammar than to walk by the laws of equilibrium," but it is surely quite easy to show our senior pupils that the rules of Syntax have a practical bearing on the mode of speaking and writing our mother-tongue. They cannot have had much practice in applying those rules to the correction of faulty sentences without ascertaining that they are of great service in settling doubtful points, in correcting solecisms of speech common in their district, and in guarding them against certain errors into which all are liable to fall, such as using a plural verb when one or two plural nouns intervene between the verb and its nominative.

Briefly, then, the object of teaching grammar is threefold: (1) to discipline the mind, (2) to give clear ideas respecting the function and relation of words, and therefore a clearer insight into the meaning of language, and (3) to aid in speaking correctly.

2. Order of Teaching.—Which is the right starting-point? The balance of thoughtful experience is in favour of beginning with the sentence, which is certainly the unit of language. A child for the most part learns the language by repeating sentences without discriminating between the words of which they are composed, each sentence forming a single whole expression of one idea. Hence the proper starting-point in teaching grammar is the sentence. If any doubt exists on this point, it is probably because an attempt has been made, in accordance with the Government Code, to teach the subject two or three years before the children are fit for the study.

Assuming that we begin with the sentence, the first thing to do is to give the young learners an idea of what it is:—

Place certain objects before the children and require them to state some fact respecting each of them. Then write these statements on the board, and in a parallel column the same words in a different order, thus:—

A sharp knife cuts well.	Cuts a well knife sharp.
A good pen is very useful.	A very pen is useful good.

By comparing the two groups of words on the left with those on the right, the children will see that, though the words are the same, the former make sense and the latter do not. From this they will conclude that words must be arranged in a certain order to make sense, and they will then be told that a group of words making sense is called a *sentence*. This of course will be followed by the teacher asking the children to frame sentences about familiar things, and in preference such things as are present.

The two essential parts of a sentence will next receive attention. By means of easy sentences it will not be difficult to teach that every simple sentence can be divided into two parts. There should be no attempt until a much later stage to carry the analysis farther, but the term "Predicate" should be applied to all that is said of the "Subject," including both "Object" and "Extension."

Next will come lessons on the Noun and Verb which may be most successfully *taught together*, through sentences, after an introductory lesson on each separately. Then, after a considerable time, lessons on the Adjective and Adverb, followed by lessons on the "Object" and "Extension." Indeed, throughout the course, the two branches of the subject should advance together. In favour of the Analysis of Sentences being taken in hand *early* it may be affirmed, with the assent of most persons, that the Analysis of Sentences is a more interesting and fruitful exercise than the more minute analysis involved in parsing, that it is certainly more valuable as a means of insight into the meaning and force of language, and that certain parts of the ordinary grammar, especially "Case," cannot be understood without it.

The following scheme is suggested as embodying these views on *the order of teaching*:—

(*a*) Meaning of a sentence and the division into its two essential parts followed by lessons on the Noun and Verb.

(*b*) The Adjective and Adverb, followed by the four main divisions of a sentence, and then the remaining parts of speech.

(*c*) Sub-divisions of the parts of speech with exercises in analysing easy "simple sentences."

(*d*) Accidence, with exercises in dividing a paragraph from an easy book into simple sentences, and analysing the more difficult of these.

(*e*) Rules of Syntax with the analysis of Compound and Complex Sentences.

3. How to Classify and Define.—Grammar, like most other sciences, is largely concerned with *classification*. To classify it is necessary to select some leading idea, as a guiding principle, and keep to it, or confusion will ensue. We may classify the books of a library according to their size, their binding, or their subject, but having chosen our guiding principle we must obviously keep to it throughout. We may, in classifying words, be guided by the initial letter as in a Dictionary, by the number of syllables as in the old spelling-books, or by the language from which they are derived. The classification in grammar, however, is based on none of these lines, but on function, that is, what a word does, or what part it plays in a sentence.

Before we can be sure to which class a word belongs, we must know the precise limits of each class. To assign these limits is the object of *definition*. In defining anything we first refer it to some class, and then we mention a certain mark or marks that distinguish it from everything else in that class. Thus, "A parallelogram is a four-sided figure whose opposite sides are parallel." Here "four-sided figure" shows the class to which a parallelogram belongs; "whose opposite sides are parallel" is the mark that distinguishes parallelograms from every other four-sided figure. Again, "a pronoun is a word that is used instead of a noun." Here "word" is the class to which a pronoun belongs; "that is used instead of a noun," is the mark that distinguishes a pronoun from all other sorts of words.

The greatest care and skill are required to define accurately, and unless the definition is accurate it is misleading. You cannot measure anything correctly unless your measuring-rule is of the right length. If you say, "An adjective is a word that qualifies," you open the door too wide and admit adverbs. If you say, "A noun is the name of any person, animal, place, or thing," you leave abstract nouns outside the door. This is rectified by saying, "A noun is the name of anything."

It must be understood, however, that it is not always practicable, in teaching little children, to give a scientific definition. At first, it is better to give such definitions as are easily understood and correct as far as they go; thus, "An adverb is a word that shows how, when, or where a thing is done," is a definition well suited for a first course, for though incomplete it is not positively incorrect. It is wholly true though not the whole truth.

4. How to teach the Rules and Definitions.—The right method is based upon the fact that the children are already practically acquainted with the right use and form of the words under consideration in any lesson. If, for instance, we wish to give a lesson on the "Number of Nouns," we have only to draw the children's attention to their practice in speaking and writing, in the case of certain selected examples, to enable them to deduce the general rule and then the modifications of that rule.

Similarly, if we wish to teach the definition of a part of speech, say of an "Adjective," we write on the board a few sentences, each containing that part of speech. Then we draw attention to the adjectives in each sentence—without mentioning the name—and lead the children to find out its function, or what it does. They will see that the selected words have the same function and therefore belong to the same class. We then give the name of the class of words to which they belong, educe the definition in a rough form from the scholars, shape it, and write it on the board for them to learn, telling from first to last as little as possible. This is an example of *inductive teaching*, which enables the learner from the consideration of particular examples to arrive, by his own reasoning, at the desired conclusion, and this in a lesson on Grammar is some rule or definition.

The next step in the lesson offers an example of *deductive teaching*, in which the rule or definition forms the starting-point, and the object is to find out which word, in any given sentence, comes under that rule or belongs to the class marked out by that definition. You will observe that in the inductive process we proceed from the particular to the general, and in the deductive process from the general to the particular. In any grammar lesson, the exercises, which constitute the deductive process, should form a large slice of the work. It is only by their means that the rule or definition is thoroughly understood and made a real part of the learner's mental possessions.

5. Parsing and Analysis.—The teacher's aim in all school exercises must be to train the intelligence and to guard against the work being done in a mechanical way. There is great danger of parsing becoming a mechanical exercise unless some such steps are taken to avoid it as are here suggested. Let the younger children in telling the parts of speech always assign a definite reason for each answer. There are two ways in which they may proceed. Let us parse the sentence, "John writes," as an example.

First method: "John" is a noun because it is the name of a person.
"writes" is a verb because it shows what John does.

Second method: "John" is the name of a person and therefore is a noun.
"writes" shows what John does and therefore is a verb.

Of these two methods the second is much to be preferred, because it puts the function of the word in the foreground, and it corresponds with what should be the order of thinking. In the interest of intelligence the teacher should attach much greater importance to the child's power to tell the function of each word than to name the part of speech. It is much better to require little children to state the use of each word in a sentence without naming the part of speech than to name the part of speech without mentioning the function.

With the same end in view, that is, the training of the intelligence, little children should often be exercised in parsing the same word, having a different function in each of the given sentences, for instance: "The *light* of the sun is brilliant."

"This is a *light* sovereign." "Tell Mary to *light* the fire." This exercise always proves interesting to a well-taught class, and is well calculated to make them see clearly that it is the function of a word, or the work which it does, that determines the part of speech to which it belongs.

In exercising the older children we must avoid all mechanical answering by requiring them to parse only such words in a sentence as present some difficulty, or peculiarity, and demand thought. But the most effectual way of all is to make the analysis of sentences the basis of the parsing. Whenever possible, let the sentence to be parsed be first analysed as the best and often the only means of enabling the pupils to parse with intelligence. It is sheer folly to treat of case and the syntactical relations of words before the children are able to analyse sentences.

Sometimes young teachers are tempted to help children over the stile by artificial means. Either the form of the word or its position is offered as a test, to determine the part of speech to which it belongs, or its case. Even if it were possible in this way to help the pupil to the right answer, instead of misleading him by a superficial mark which often deceives, such a course would only defeat the great object for which grammar is taught, namely, the cultivation of the intelligence.

CHIEF POINTS.—

1. Object of teaching grammar is threefold—
    - (*a*) To discipline the mind.
    - (*b*) To give a clearer insight into the meaning and force of language.
    - (*c*) To aid in speaking correctly.
2. Analysis should be taught early.
    - (*a*) It is a more interesting and fruitful exercise than parsing.
    - (*b*) It is also more valuable as a means of mental discipline and the clear apprehension of an author's meaning.
    - (*c*) Certain parts of grammar are unintelligible without it.

CHIEF POINTS.—

3. The classification of words, in grammar, is based on function, and the precise limits of each class are determined by the definitions of the parts of speech.
4. To teach a rule or definition we must proceed *inductively*, that is, from the particular to the general; whereas, in exercising on a rule or definition, we proceed *deductively*, that is, from the general to the particular.
5. To prevent parsing from being mechanical
    - (*a*) Let little children mention the function of each word before naming the part of speech.
    - (*b*) Let the older children first analyse the given sentence and be only required to parse the words that present some difficulty.
    - (*c*) Avoid giving superficial marks as a test.

COMPOSITION.

1. How the Art is Acquired.—Composition, or the art of expressing one's thoughts in words, whether spoken or written, is a subject that should be regularly taught, and not left to incidental instruction, or limited to the correction of faults. Children should be trained to express their meaning with clearness and due force, in appropriate language, free from grammatical error. Briefly, what they have to be trained to do is to use proper words in proper places. The power of doing this depends chiefly on (1) clearness of thought, (2) an adequate vocabulary, (3) acquaintance with the right forms of speech.

No one can make his meaning plain unless it is, first of all, plain to himself, nor can he express his meaning effectively unless he has the right words at his command, nor avoid solecisms of speech unless he is acquainted with the rules of grammar. Whilst there is ample scope for direct instruction in using the right words in the right places, success, no doubt, is mainly the result of practice in imitation of good models rather than of attention to set rules. Facility in writing good English is greatly influenced, as every one knows, by the books a person reads, the company he keeps, and by the style of conversation which he constantly hears, and in which he habitually takes part. Children who speak well soon learn to write well. If we would have the older children *write* accurately, we must teach the younger to *speak* accurately; that is to say, we must teach oral composition before written, and teach it from the first.

2. Preparatory Training.—Even the youngest children should have practice in framing sentences about familiar objects placed before them, and should be encouraged to take part in little conversational lessons on matters of common interest within their ken. Much also may be done by requiring the children to give all their answers in complete sentences. Steadily refuse to accept any fragmentary answer that indicates that the answerer is in possession of the right idea if he would only take the trouble to express it. Strive hard to get the children to state what they have to say explicitly and completely; and when you can only draw out the truth in fragments, make a point of having the fragments pieced together before passing on. You will thus be increasing your pupils' command of language whilst imparting definiteness and clearness to their ideas.

There is abundant scope for this preparatory training in the right use of words in the lessons on reading and grammar; for in the grammar lessons the learners are constantly exercised in framing sentences in illustration of the rules, and in the reading lessons they are constantly asked the meaning of words and required to form sentences to show how they are used. All lessons, in fact, which offer practice in oral answering may be turned to account as aids to the young learners in speaking accurately and in making their meaning plain.

For these lessons, however, to yield their best fruit in this respect, the teacher's language must serve as a model, both in the choice of words, in the orderly arrangement of the ideas, and in simplicity and lucidity of style; but such a model his language can never be unless he first makes the subject of his instruction perfectly plain to his own mind, for clear thinking must ever come before clear speaking.

One other important matter applies, like the last, to the whole school course. From beginning to end there must be a persistent endeavour to enrich the children's vocabulary. Whenever a new idea has been communicated, the corresponding word should be given. Each word, remember, has its own proper use; very seldom do two words bear precisely the same meaning.

A start may also be made, in the course of this preparatory training, in written composition. The initial step consists in writing answers to definite questions, each being answerable in the form of an easy "simple sentence." The next step is the combination of two or more of such sentences into one. The exercises also in transcription and dictation will pave the way for written composition, for they serve to impress, not only the correct mode of spelling and punctuating, but also the correct forms of expression.

3. First Steps in Written Narrative.—The first steps always cost the greatest effort, and special pains should therefore be taken to render them as smooth and easy as possible. The first attempts to write continuous narrative are most easily made by the reproduction of a short story.

Should the story be told or read? If told, a more vivid impression is made; if read, the story is given in a more compact and concise style, and probably in better chosen words. As once telling or reading is not sufficient, it will be easy to combine the advantages of each method by first telling the story and then reading it. In this way the language used will vary. And this is important; for when the story is not told, but read two or three times, many of the children will reproduce the very words of the book, and what should have been an exercise in composition becomes chiefly an effort of memory.

At the outset it is not enough to tell and read the story before calling upon the class to give their own version of it. After the teacher has told the story, he must question the class to see if they understand it, and write the chief topics on the blackboard. Then he must read the story, and let the class by a collective effort reproduce it orally, each scholar in turn making up a sentence. As each sentence is composed, let it be criticised and corrected, and then written on the board. It may then be assumed that all are sufficiently conversant with the ideas to be expressed, and the order in which they come, to make an individual attempt to produce the story on paper.

4. More Difficult Exercises.—Success in teaching depends much on graduation. In the previous exercises on paper the pupils have had practice (1) in framing short sentences, (2) in combining two or more sentences into one, (3) in connecting sentences in the form of a story, or simple narrative, previously read to them. In the exercises that follow the reproduction of a story, the pupils have to write an essay or letter, and in doing this they are thrown more and more on their own resources. They have now to search their mind for suitable ideas and to marshal them in a natural or logical order.

Care however must be taken, in setting these exercises, that the pupils are furnished with ideas on the subject they are required to write about. In teaching composition our great aim is to train our scholars to express their ideas clearly, and this of course is impracticable unless they are in possession of clear ideas to be expressed. We must, therefore, choose such subjects as admit of clear and definite ideas, or plain facts, which the scholars have already acquired, either from lessons received, or from their own observation and personal experience.

On beginning *essay writing*, the children have two new elements of difficulty—the selection of ideas suitable for their purpose and their effective arrangement. For some considerable time it will be necessary to aid them, by eliciting suitable material for the essay by pertinent questioning, and by suggesting the order in which these topics should be treated, the several points being properly arranged on the blackboard. It will also be desirable, at first, to let the class compose the essay orally, by a combined effort, before attempting it individually on paper. These aids should, of course, be gradually withdrawn, but in no case should a pupil—even when thrown entirely on his own resources—be allowed to begin the essay without previously preparing an outline, indicating the topics and their order of succession.

Letter-writing is the most valuable form of composition with the senior children. Careful instruction is required on a number of details, but no new difficulty is involved. The teacher will best aid beginners by first of all writing a model letter or two with their co-operation. And when they have begun to indite their own letters, it will be advisable, for some time, for him to have a preliminary talk on the contents of each proposed letter, suggesting suitable topics, and writing them in due order on the board. He should make his scholars understand that they must endeavour (1) to write as they would speak to the person addressed, (2) to finish one topic before beginning another, and (3) to attend to the little courtesies of life. It is highly desirable that the scholars should write on note-paper, fold up and enclose their letters in envelopes, and address the same, taking care to keep their paper clean, and to leave suitable margins, in fact, to study appearance.

CHIEF POINTS.—

1. Our chief aim is to train our pupils to put the proper words in the proper places.
2. Our first care must be to train them to *speak* accurately
    - (*a*) By requiring all answers to be fully stated ;
    - (*b*) By constantly enlarging the pupils' vocabulary ;
    - (*c*) By endeavouring to make our own language a model.
3. Graduated Exercises in *Written* Composition.
    - (*a*) Framing "simple sentences" taken singly.
    - (*b*) Combining two or more sentences into one.
    - (*c*) Connecting sentences by reproducing a story told or read.
    - (*d*) Selecting and arranging ideas in writing Essays and Letters.
4. First Attempts in Reproducing a Story.
    - (*a*) Tell the story.
    - (*b*) Make a brief analysis of it on the board.
    - (*c*) Read the story.
    - (*d*) Get the class to tell the story, each child contributing a sentence.
    - (*e*) Lastly, let each write the story in his own words.
5. Essay-Writing.
    - (*a*) Elicit suitable material by questioning.
    - (*b*) Write the topics in due order on the board.
    - (*c*) Get the class to compose the essay, by a collective effort, orally.
    - (*d*) Then let each do his best on paper.
    - (*e*) These aids are to be gradually withdrawn.
6. Letter-Writing.
    - (*a*) Chief Aids to be given by the teacher—
        - (1) Writing model letters on the blackboard.
        - (2) Suggesting topics and arranging them on the board.
    - (*b*) Chief Rules to be attended to—
        - (1) Write as you would speak.
        - (2) Finish one topic before beginning another.
        - (3) Attend to the little courtesies of life.

HOW TO TEACH GEOGRAPHY.

Apart from its educative value, geography has a strong claim to a place, although a secondary one, in every school curriculum on account of its stores of interesting and useful knowledge—knowledge that tends to increase the learner's interest in the world, to open his eyes to its wonders and resources, and to extend his mental vision far beyond the range of his observation. When well taught, geography has a peculiar charm for young people, because it brings them into touch with real things.

The advantages of this study do not cease with a child's school days, but are enjoyed as long as he lives and learns. The knowledge gained from the study of geography has an important bearing upon that of many other subjects, being not only a great aid to the study of history, but to the due appreciation and enjoyment of a large class of literature. Books of travel and the lives of men of action are unintelligible without some knowledge of the localities that formed the theatre of their deeds of adventure and enterprise. Moreover, the daily newspaper, which constitutes too often the sole library of the working-man, is, in respect to many of its columns, the medium of only the vaguest ideas to one who is ignorant of general geography.

ORDER OF TEACHING.

Let us recur, for a moment to our primary principles. A child must first get a stock of ideas by the use of his senses, learning at the same time how to express these ideas in suitable terms; then he must be led to build upon the knowledge thus acquired, a knowledge of similar things beyond the range of his observation. Applying these principles to the order of teaching geography, we see that we ought to begin at home. Our first lessons should be on the district of the school, embracing all that the scholars can see with their own eyes. By a thorough examination of the school neighbourhood, the children may acquire a certain number of geographical ideas as the fruit of their observation, and then learn to express them in geographical terms.

Our pupils having gained a fair knowledge of what has been aptly called "home geography," what is our next course? Shall we take the school district as a centre, and gradually extend the field of our inquiry, proceeding from the parish to the county, from the county to the country, and then to the continent of Europe, and, finally, to the world at large? This course is a plausible one, but not a wise one. It is impossible to give a true idea of the parts of a thing before giving a conception of the whole, and therefore it is desirable to give some knowledge of the world, as a whole, as soon as we have taught the geography of the school district. The reasons in favour of beginning with home geography do not hold good when we pass beyond the boundary of what is actually open to the children's observation. The part of the county immediately beyond their own horizon is to most children as much an unknown land as the more remote parts of the country.

Begin, then, with the geography of the school neighbourhood, then take the world at large, and give such general notions of the whole as will serve as a kind of framework in which afterwards to set a knowledge of the parts. After this preparatory course begin the systematic study of the subject with the geography of our own country, which when thoroughly understood will serve as a good standard of comparison in our study of other countries, and form a central point of light and knowledge gradually illuminating regions more and more remote. "Learn one thing well," says Jacotot, "and refer everything to that."

FIRST LESSONS.

1. Preliminary Steps.—Before beginning the study of geography there are one or two preliminary matters that should occupy the attention of the learners. And, first, steps should be taken to prepare them for the right understanding of a map, without a knowledge of which no definite ideas of the geography of any locality can be formed or fixed in their minds. Their chief difficulty in understanding a map arises from their being unable to compare the representation with the thing represented. Hence the study of maps should begin with the drawing of ground-plans that admit of such comparison; plans, for example, of the children's class-room, school-room, and playground. As another difficulty consists in forming a correct conception of scale, each of these plans should be drawn to different scales. In making these drawings the children should take an active part, all measurements being made by them, and their ideas elicited at every step.

Secondly, a knowledge of the cardinal points is required before the relative position of places can be clearly apprehended. This knowledge is most easily imparted by reference to the position of the sun at noon, the children being taken into the playground, at 12 o'clock, on a sunny day, for this purpose. A line should be drawn on the ground in the direction of the shadow cast by an upright post, and used as a line of reference by which to determine the cardinal points. The inquiry will be invested with additional interest if a mariner's compass is introduced, and the direction of the needle compared with that of the line of shadow. The children should then be well exercised in giving the bearings of well-known places in reference to the school, no attempt being yet made to learn about cardinal points in connection with maps.

2. Home Geography.—The young learners are now prepared to begin the study of geography, and a start is best made, when circumstances admit, by an actual inspection of the school district. Many schools, however, are ill placed for the study of geography from actual observation, but as far as practicable the first lessons should turn upon what the children actually see or have seen. If unable to take them into the country to see with their own eyes under your guidance, you may, perhaps, be able to induce them to visit certain spots within easy reach, telling them what to notice as a basis for your next lesson. To give clearness and definiteness to their ideas respecting the build and leading features of the district, a relief model of sand, clay, or putty must be constructed. With the aid of a suitable model, which gives a bird's-eye view of the whole district, enabling its principal geographical features to be seen at a glance, the children may make acquaintance with these features in their concrete form, and learn the geographical terms used to express them.

3. Meaning of a Map.—From the model of the school district the children should be introduced to a map of the same. The map should be drawn in their presence from the model, and the two compared as the work proceeds. The various steps, then, by which children may be most successfully taught the meaning and use of a map are these:—

(1) Drawing ground-plans of the class-room, school-room, and playground.
(2) Learning the cardinal points by reference to the position of the sun at noon.
(3) Studying a model of the school neighbourhood.
(4) Seeing a map drawn to correspond with the model, and comparing the two.

It will be necessary to supplement the children's knowledge of geographical facts derived from a study of the school district by taking some other district of a typical character. The Isle of Wight is very suitable for this purpose, being convenient in size and shape, and containing good examples of most of the physical features to be taught. The district selected should first be presented in the form of a model, and, lastly, in that of a map.

4. Geographical Definitions.—The children are now ready to learn how to define the terms that they have been taught to use. Not more than one or two of such terms should be taken in the same lesson. A model should be made containing a variety of examples of the particular geographical feature you wish your pupils to define. If, for instance, your lesson is on the term "cape," you should mould capes of different kinds, such as a cape formed of a lofty crag terminating abruptly, or one formed of rocks gradually descending from a high cliff to the sea-level, or one formed of a grassy slope or tongue of sand. The definition should come as the result of an examination of such a model, and should be followed by an exercise in pointing out "capes" (1) on a map drawn on the board from the model, (2) on a coloured chart designed to illustrate the meaning of geographical terms, and (3) on a map of England.

N.B.—See also notes of a lesson on "An Island and a Peninsula" in the Appendix.

MODE OF TEACHING.

1. Selection of Facts.—The value and interest of the study of geography hinge upon the wise selection of facts. If children ever look upon geography as a wearisome study, it is probably because their memory has been overloaded with bare names and a number of dry details. Some lessons in geography are like those over-crowded maps that have been described as, "a kind of puzzle in which the engraver tries to hide and the student to find the names." We ought to set before our scholars such a selection of matter as will supply them with material for thought, such descriptive sketches as will bring before their minds the scenes presented to the eyes of travellers, such facts as have a general human interest from their bearing upon man, his occupation, fortunes, and welfare.

2. Realities.—Our success will also much depend upon our power of investing the subject with an air of reality. In times past, the teacher too often gave stones for bread, mentioning terms without ideas, and names without facts. Our watchword must be "realities not names merely." We must appeal to the imagination and intelligence of our pupils, helping them to realise the build of a country and its general aspect, and leading them to associate with the names of places such facts as will serve to give them individuality, or a form and colour of their own.

3. Reasons.—Not only should facts be associated with the names of places, but an endeavour should be made to teach the relation between the facts themselves; for they are not the product of chance but arise from the nature of things. Some facts are obviously related to each other as cause and effect, others spring from causes which lie hidden, but we may be sure that for every fact there is a reason, although we may be unable to find it. It is not by chance, for instance, that so many towns of Lancashire are the seats of the cotton industry; or that raw cotton is landed at Liverpool and manufactured elsewhere; or that Canterbury has a grand cathedral, and that the bishop of that see is the "Primate of All England." The teacher must be always on the outlook for the reasons that underlie the facts. When his scholars understand the reasons, they will not only have less difficulty in remembering the facts, but the whole mind will be enriched in the process of learning instead of the memory being loaded with a dead weight of bare names and meaningless details.

4. Rules.—A few rules, in accordance with these principles, may now be added :—

(*a*) Call in the aid of pictures, maps, diagrams, and models to give vividness, definiteness, and precision to your description. And show samples when dealing with productions.

(*b*) Teach the facts in their natural order, *e.g.*, mountains before rivers and rivers before towns ; soil and climate before productions and productions before commerce.

(*c*) Associate historical, social, or industrial facts with the names of places. And give the origin of the names when interesting or instructive.

(*d*) Constantly compare, so as to give ideas of foreign places and objects by means of similar things at home, and thus enable the learner to interpret a description of what is new and strange by means of what is familiar.

(*e*) Make the children acquainted with certain heights, distances, and areas respecting their own neighbourhood, county and country, and use them as standards of comparison in treating of other lands.

(*f*) Give reasons, when possible, taking care to exercise the whole intelligence and not merely the memory.

5. A Suggestion.—There is one other matter of some moment which cannot be reduced to an intelligible rule without a little explanation. In giving the geography of any country that we wish our pupils to know pretty thoroughly, especially our own, it is usual to exhaust one set of facts before taking the next, teaching for instance all about the mountains and then all about the rivers that we wish our pupils to learn, and going over the same sets of facts about three times in the course of the year to impress them. Instead of that we should, on going over the ground the first time, pass over the minor facts, and concentrate attention on the salient points only. This should be done, in the case of our own country, by giving three courses of lessons, each covering the whole ground. In the first course the broad features only would be given, additional particulars being added in each successive course. Thus in going over the ground, at each revision, old knowledge would be revived and new knowledge added. This seems the most natural way of promoting the growth of knowledge, and is applicable to all subjects of instruction.

MAPS AND MAP-DRAWING.

1. **Blackboard Maps.**—The basis of all effective instruction in geography is the map drawn on the blackboard as the lesson proceeds. There is no other way in which the teaching can be rendered so clear and definite, by which the pupils' attention can be so well maintained, and the facts so firmly fixed on the memory. The blackboard map enables the teacher to suit the action to the word, to present just those details that he wishes to communicate, and to do so on a scale sufficiently large for all in the class to see distinctly. Even when a lesson is given from the printed map there is generally wanted some sketch on the board to exhibit some important part with greater clearness.

2. **Printed Maps.**—The printed map has the advantage of colour, and is therefore best for teaching boundaries and divisions. It also enables the learner to locate the part drawn on the board, as it generally covers a wider area. The printed map should therefore be always set before the class in a geography lesson for comparison and reference. It is also capable of being used as a medium for self-instruction under the teacher's guidance. There is a vast store of facts which the scholars can be trained to gather for themselves from the inspection of such a map, and to gather in a more interesting and fruitful way than from the pages of a book.

3. **Map-Drawing.**—Map-drawing by the pupils is a still more effective way, when sensibly taught, of studying geography.

The mere copying of maps may be useful as an exercise in neatness and accuracy of handwork whilst perfectly useless as a means of learning geography. To make it available for this purpose, let the map drawn by the pupils correspond with the last lesson in geography and contain only the names then taught. The teacher's map on the blackboard ought to serve as a model for them to copy. To induce them to study the map whilst drawing it, let them afterwards be required to fill in an outline map with the same details from memory.

CHIEF POINTS.—

1. Geography should be taught chiefly for the sake of its information.
2. A child's first geographical ideas should be formed, if possible, by direct observation of the chief features of the school neighbourhood.
3. The chief difficulty in understanding a map arises from one's inability to compare the representation with the thing represented.
4. The meaning and use of a map are, therefore, best taught by means of plans which admit of such comparison, and by drawing maps from models.
5. Models are best for teaching the definitions and for showing the build of a country.
6. Chief faults to be avoided: giving terms without ideas, names without facts, and facts without reasons.
7. For rules to be observed in teaching. *See* small type.
8. Maps drawn on the board as the lesson proceeds are the most effective means of instruction.
9. Printed maps contain a store of facts which the scholars should be trained to discover for themselves.
10. Map-drawing by the pupils, when sensibly taught, is of the greatest service in studying geography.

TEACHING OF ENGLISH HISTORY.

THE history of a nation is the record of its common life. History is to a nation what biography is to an individual. In a biography we trace the progress of a certain person in the part he played on the world's stage, and we try to account for his success or failure by connecting his outer life with what we know of his inner life, showing how character and circumstances acted on each other, and how, if a successful man, he made failure the stepping-stone to fortune, "never knowing when he was beaten."

Similarly, it is the function of history to trace out the rise or fall of a nation, and to mark its growth or decay in respect to its extent of territory and population, freedom, wealth, and general well-being. And in its higher scope, it reveals the secret of a nation's success or failure by setting forth the aims and character of its people and the nature of its institutions, showing in the case of a great nation how it battles against adverse circumstances, how it refuses, when defeated, to own itself beaten whilst there is a possibility of ultimate victory, and how when thwarted in one direction it seeks redress of fortune in another.

This view of the function of history suggests that in teaching the history of England, we should make it our constant aim to trace out the progress our nation has made in developing its resources, in perfecting its mode of government, in improving the social condition of its people, and in extending its territory and influence. We should endeavour to show how the present is the outgrowth of the past, and our present position as a nation the outcome of our national character and institutions, together with the fortunate circumstances we enjoy in the unique situation and resources of our favoured land.

REASONS FOR TEACHING IT.

1. **Its Intellectual Value.**—To a person without a knowledge of the outlines of our national history, English literature, and even the daily newspaper, must often be dark and perplexing, for it is assumed by every writer that such knowledge is a common possession. Apart from this consideration, it is in itself of no little educational value, serving to enrich the mind with the knowledge of important facts, to strengthen the memory in retaining them, and to exercise the imagination in realising the scenes and events described. In its higher aspects, the study of history exercises the power of comparison and judgment; for it offers abundant opportunities of tracing out the connection between (1) cause and effect, (2) end proposed and means adopted, (3) a certain course of conduct and ultimate consequences, (4) the condition and life of the people at one period and another.

In illustration of my meaning let me mention as an example of (1) Charles I.'s insincerity and his execution; of (2) the establishment of Roman Catholicism and the Declaration of Indulgence by James II.; and of (3) the character and aims of Wellington and Napoleon, leading, respectively, to ultimate success and disaster.

2. **Its Moral Value.**—History is especially valuable for its moral lessons. It affords numerous opportunities of drawing out the sympathies of children for the generous, the brave, and the noble. It serves to expand the heart as well as to inform the mind in its stirring stories of the patriot, the martyr, the inventor, the discoverer, and the philanthropist. Even a little child can benefit by the lessons that are taught by the courage, wisdom, and unselfishness of King Alfred, by the cruelty and lawlessness of King John, by the love of

freedom and of country of such men as Wallace and Bruce, and by obedience to conscience, at the cost of life, in the case of Sir Thomas More and the Protestant Martyrs of Queen Mary's reign.

3. Its Practical Value.—What practical value, it may be asked, has a knowledge of history beyond the moral influence it may be supposed to exercise? Will it help our scholars on their becoming men and electors to discharge their duties as citizens? It will not offer any direct, definite guidance in the polling-booth, but it will tend to produce the spirit of political wisdom and that temper of mind which is opposed to all sudden and violent changes. When a person is acquainted with the struggles and sacrifices our forefathers made in building up the British Empire and Constitution, it is natural for him to feel that what they so dearly bought we should prize and strive to preserve. The study of our national history is, therefore, well calculated to make our scholars value the institutions of their country, to prejudice their minds against any violent revolutionary changes, to induce them to love their native land, to be proud of its fame, and jealous of its honour, and to inspire them with the spirit of freedom and manliness; in a word, it lays the foundation for a knowledge of their rights and responsibilities as citizens and fosters in them the spirit of true patriotism.

COURSE OF INSTRUCTION.

1. Guiding Principle.—In drawing up a scheme of instruction we must be guided by the tastes and powers of our pupils, which will vary of course with their age and educational progress. But there are one or two characteristics, bearing on the teaching of history, which are common to children of all ages, and which we must, therefore, take into account throughout the whole course of instruction. All enjoy listening to tales of adventurous deeds and of stirring events, such as battles by sea and land. What has been styled "drum and trumpet" history has a great charm for boys—if not for girls—of all ages. Then again all take a livelier interest in personal incidents and anecdotes than in any abstractions about law and liberty and the like. Whilst trying to conform to these preferences so far as the serious study of the subject admits, the teacher will recognise at least three stages in his course of history lessons, and present at each stage that form and matter of instruction which most nearly accords with the educational wants and capacity of his pupils at the time.

2. **Stories.**—In the first stage, our object is to introduce to the children the study of history in a pleasant and informal way. This is best done by a series of simple stories from English History. If asked, "Where to begin?" we should reply, "At home." The starting-point may be suggested by some castle or abbey in the neighbourhood, or failing all objects of historic interest in the locality by any old custom familiar to the children, such as the observance of "Oak-apple Day," or the anniversary of "Gunpowder Plot." Such stories, when well told, serve not only to please but to profit. Even if they do not convey, in all cases, strictly accurate information, they help to instil healthy sentiments, to enliven the imagination, and to give an interest in things beyond the horizon of the present and the visible. The learning of facts at this stage is of quite secondary importance. Not so in the one that follows.

3. **Landmarks.**--In the second stage should come the leading events of our history, and a distinct endeavour should now be made to implant the chief facts on the memory, and to keep them fresh and green by means of revisal exercises. We all know in visiting a strange city or district what an advantage it is to ascend some lofty tower and to take in a bird's-eye view of the whole neighbourhood before inspecting

any particular building or locality. There is a similar advantage in studying history to get an outline of its salient features before entering upon the minuter examination of any particular part. A knowledge of the landmarks of our history is all that most of the scholars in elementary schools can hope to obtain, and it will certainly be more useful to them in after-life to have some knowledge of the leading events in our history rather than a more minute knowledge of a small portion.

And here I would carefully guard against the false notion that in giving a general view of our history, we are to confine our teaching to bare outlines and to produce an unlovely skeleton of the whole. What we have to do is to select the events which stand out most conspicuously and to present them in life-like lineaments, relating such details and personal incidents as are calculated to produce a vivid impression and to create a mental picture of the scenes and actions described, but rigidly excluding all minor events and all such details as are neither interesting nor useful. The art of leaving out is a high attainment especially in teaching history.

4. Periods.—It may be objected that by this treatment of the subject we give only a few loose beads of knowledge. It may be that the thread which connects them is rather slender; but if so, the weakness will be corrected in the third stage of the course, when a continuous course of instruction will be given on a certain period, or on some special feature of our history, such as the growth of the Empire. In giving the history of any period we should bear in mind that a nation's history does not merely consist in its military and naval triumphs and reverses, but also in its social and political progress, in its home life and mode of government. Hence the curriculum of study should embrace the growth of commerce, the history of important inventions, the revolutions wrought by machinery in industrial life, the discovery of new lands and the establishment of new colonies with their subsequent growth and prosperity, and the condition of the people in respect to material comfort, intellectual, moral, and religious culture.

MODE OF TEACHING.

1. Biographical Treatment.—In teaching history to children the biographical method will be found the most effective. The personal element is always the most interesting, and yet the history lessons in our schools are too often impersonal and void of human interest, narratives of deeds without doers, and of events without any field of action, for the mere names of persons and places tenant the mind with nothing more real than mere shadows. In describing any event take care to give prominence to the part taken by the foremost actor, and make him the centre of the picture in your description. The biography of a few men of "light and leading" will convey a tolerable idea of the chief events in the period in which they lived, their lives being the thread on which the main facts of history may be strung. In drawing the portrait of such men and in describing the part they played, nothing so effectively brings them into view as their characteristic sayings and anecdotes respecting their conduct at critical moments in their lives.

In favour of this biographical treatment let me quote the words of two famous historians, Carlyle and Froude. The former says, "The history of mankind is the history of great men. To find out these, to clear the dirt from them, and to place them on their proper pedestals, is the function of the historian." And the latter says something to the same effect, "The object of history is to discover and make visible illustrious characters and pay them ungrudging honour. That is the best condition of things which produces, not the largest amount of knowledge or wealth, but the men of noblest station." What is true of the historian is also true of the teacher; both have to present our great men in their true proportions, and to place them on a pedestal as models, in certain respects, for our admiration and imitation.

2. Learning of Dates.—It is foolish to decry the learning of dates, for unless they receive adequate attention the most hopeless confusion is likely to ensue. A date is often to one well versed in history a key of great value; for instance, the date of an author's work, when first published, enables such a man to recall the circumstances of the times in which it was written, and thus to understand the bearing of much in the work that would be otherwise obscure. Chronology is no less than the dial of history. Dates enable us "to tell the time," to keep the several events in their proper order, and to form some definite notion of the relation between them.

The personal history of the sovereigns of England is rightly scouted as an adequate presentment of English history, but the arrangement of the facts according to reigns serves the same purpose as chapters in studying the Bible, dividing the subject into handy portions for study, and forming a convenient means of reference in placing events. And certainly the dates of accession when well learnt are most useful in fixing the approximate time of any event, if we only know the reign in which it occurred. Besides the dates of accession, children should know the dates of about a score of the most important events.

3. Pictorial Teaching.—In all three stages the teaching should be mainly oral, supplemented by reading lessons. Epitomes should be used, not to communicate knowledge, but to methodise and fix the facts already learned. In no subject does the teacher need a greater power of "picturing out" what he attempts to describe, so as "to make the past present, to bring the distant near, to place us in the society of a great man, or on an eminence which overlooks the field of a mighty battle, to invest with the reality of human flesh and blood beings whom we are too much inclined to consider as personified qualities in an allegory" (Macaulay). To succeed in this difficult task, the teacher must make himself familiar with picturesque details, such as can be obtained from the work of an author who has gone fully into the subject. School text-books will not serve the teacher's purpose; they are written for learners, not for their instructors.

There are several important aids in teaching of which we should make a liberal use. Among these, pictures take a high place as a means of giving life and colour to verbal narrative. Special passages, containing glowing descriptions by famous historians, will do much, when read at the right points of a lesson, to kindle the imagination of the young learners. Ballads, ancient and modern, are also valuable as a means of lending a charm and living interest to the more serious narratives of history. A copious use should also be made of the historical plays of Shakespeare. No history that we possess presents us with such vivid and true portraits as are found in his plays. He has justified the definition of the historical drama as "history made visible." We should also direct the attention of our scholars to any good historical novels relating to the event or period under review.

Another great aid in vivifying our history lessons is to be found in visiting with our scholars old castles, cathedrals, and abbeys, and such buildings as contain the relics of ancient times, notably the Tower of London, whose every stone is a line in history, and in which we can see the costumes, the ornaments, the armour, and the implements of war used in successive centuries. Above all, the teacher should turn to full account any historical event, person, monument, or building connected with the locality of the school. It will also help children to feel the reality of bygone events that divided our country into hostile camps, to be called upon to say which side they would have taken had they been living at the time of their occurrence, and to justify their choice.

CHIEF POINTS.—

1. History should be taught because
    - (*a*) A knowledge of it is often necessary for the right understanding of English literature, and even the daily newspaper.
    - (*b*) It has a high educational value—mentally and morally.
    - (*c*) It has an important bearing upon the future citizen's knowledge of his rights and responsibilities.
2. Stages of Instruction.
    - (*a*) First stage—historical stories.
    - (*b*) Second stage—leading events.
    - (*c*) Third stage—continuous narrative on some special period or subject.
3. Biographical Treatment.
    - (*a*) Chief object of history is to place great men and women on pedestals as models, in certain respects, for our admiration and imitation.
    - (*b*) The personal element is the most attractive. Lessons, lighted up with the remarkable sayings and doings of the chief actors, are the most interesting and impressive.
4. Learning of dates.
    - (*a*) Chronology is the dial of history enabling us "to tell the time."
    - (*b*) The most useful dates are those of the accession of successive sovereigns and of about a score of the more important events.
    - (*c*) Dates are useful as a means of keeping events in their proper order and of preventing hopeless confusion.
5. Aids in teaching.
    - (*a*) Pictures.
    - (*b*) Special passages from famous authors.
    - (*c*) Ballads, ancient and modern.
    - (*d*) Historical plays—dramas being "history made visible."
    - (*e*) Historical novels.
    - (*f*) Visits to old castles, cathedrals, abbeys, and such buildings as contain the relics of olden times, notably the Tower of London.

ELEMENTARY DRAWING.

ADVANTAGES.

Drawing has considerable claims to a place of some importance in any elementary school, since it is an instrument of education, a recreative study, and a valuable ally in practical life. It is true that only the few who are specially gifted will ever excel in drawing as a branch of art, but it is no less true that the great majority can be taught to draw so as to represent simple objects, with tolerable accuracy, in a useful sort of way. Although little can be done, in our primary schools, in cultivating artistic taste, or the æsthetic faculty, nevertheless elementary drawing, when skilfully taught, tends to develop a sense of proportion and balance and to awaken some sense of the beauty of form. No doubt something also might be done to quicken the perception of the harmony of colour.

Drawing is the handmaid of science. Not only is it in constant demand, in the laboratory or science lecture room, in drawing diagrams and in sketching apparatus, but it is a valuable aid in training the sense of sight and in quickening the powers of observation. No one can make an earnest attempt to draw an object without gaining a more accurate perception of its form and parts. A child finds he has to look intently at a drawing before he can copy it correctly, and to scrutinise an object very closely before he can take in its details so as to represent them in his drawing.

The attempt to imitate or represent in making a drawing is not only one of the surest ways of cultivating accuracy of eye, but of training the hand to act under its guidance. Drawing is certainly one of the best means of giving eye-and-hand training, accustoming the eye to observe minutely and the hand to execute deftly.

As the practice of drawing conduces to accuracy of observation, manual dexterity, and appreciation of the beauty of form, the training which the child receives by his drawing lessons at school is likely to have, in many cases, a marked effect upon the quality and style of his future productions in the workroom, and upon his own worth as a worker. Skill in drawing, such as a boy might acquire in going through an elementary course at school, often constitutes in after-life the difference between the foreman and the workman, or at any rate constitutes the primary cause of that difference. "Without a knowledge of drawing," says Nasmyth, the great engineer, "the workman is only 'a hand'; with it he indicates the possession of a head." Nasmyth himself was the son of an artist, and was trained, he tells us, "to sketch with exactness every object, whether natural or artificial, so as to enable the hand accurately to reproduce what the eye has seen."

The advantages of such a power, if only acquired in a moderate degree, must often be considerable in practical life. The man with a fair knowledge of drawing is able (1) to record the forms of machines and other striking objects, in visiting places of business akin to his own; (2) to interpret aright the plans and drawings put into his hands for carrying out a certain work; and (3) to convey readily to others his own ideas on certain points, that occur in the course of daily business, either by way of direction to his subordinates or of suggestion to his superiors.

PRINCIPLES.

Young children love to draw and paint but only real objects. Where nature points the way, it is for teachers to follow, not indeed blindly, but so as not to run counter to her leading. Little children naturally delight to make drawings of familiar objects, such as horses, cows, and dogs, and above all to colour them. They like to begin where the drawing-master would have them end. He would have them practise, from the first, the drawing of meaningless lines and figures—meaningless I mean to them. And when, at length, they are permitted to make a drawing of a real object, he is horrified at their wish to give an air of reality to their delineation by a little harmless shading. As for the use of colour in such young hands, it is an abomination to him. "Form comes before colour," he will insist. And so the learners are often kept rigidly at form without colour, and in practising nothing but conventional forms, with a notice board in front of them warning all trespassers off the domains of nature under pain of prosecution. As well might our children, when taught to sing, be kept at scales and exercises without ever learning a tune.

Of course there are many practical difficulties in the use of a box of paints in an elementary school, not the least being the expense attending it. But it is always well to know what is desirable, so that in practice we may approach as near as we can to it, as in this case by the use of coloured chalks. Let me draw your attention to what Mr. Spencer, in his valuable book on Education, has written on the subject:

> "The priority of colour to form should be recognised from the beginning; and from the beginning also, the things imitated should be real. The greater delight children take in colour should be continuously employed as the natural stimulus to the mastery of the comparatively difficult and unattractive form: the pleasure of the subsequent tinting should be the prospective reward for the labour of delineation. And these efforts to represent interesting actualities should be encouraged, the extreme indefiniteness which these first attempts exhibit, being anything but a reason for ignoring them. No matter how grotesque the shapes

produced; no matter how daubed and glaring the colours. The question is not whether the child is producing good drawings. The question is, whether it is developing its faculties."

From these principles we draw the following practical conclusions: (1) Drawing should commence in the Infant School; (2) it should there be taught as far as possible in connection with real things and in an informal way; (3) we should try to gratify the little ones' love of colour by allowing them to trace outlines in colour. No matter how crude these attempts in the case of little children, if only they do their best. They are then developing their powers of observation and imitation, beginning to form habits of accuracy and neatness, and acquiring command over their fingers, and doing this in the way that is most natural and spontaneous.

One of the many things we have learnt from the law of evolution, which knows no "leaps and bounds," is to avoid all sudden transitions in educating a child. And so when a child has left the Infant School, and the formal instruction in drawing has begun, he should still have a certain amount of practice in drawing real things, and in colouring outlines. Interest in learning must be maintained as the first condition of success. The Government Circular on Drawing recognises this principle, for it says: "In order to interest the children it is advisable to teach them to draw as early as possible from actual objects, such as the doors and windows, furniture, and apparatus of the schoolroom."

DRAWING FROM OBJECTS.

If our scholars are to derive much practical advantage from their drawing lessons at school, they must learn how to draw from simple objects with facility, and to draw diagrams and geometrical figures with perfect accuracy. The drawing exercises are commonly executed in too slow and laborious a way, with a too frequent application of the india-rubber, for the future requirements of the majority when in actual business. What is called *Freehand*, as usually practised, seems to owe its name to its conspicuous want of freedom.

Whilst such painfully slow work may conduce to the attainment of such accuracy and finish as are needed in some branches of industry, the power of rapidly sketching, with tolerable accuracy, any common object, from sight or memory, is of a much wider application. Just as we should give special exercises in arithmetic as a training in rapidity of calculation, so in drawing we should, at certain times, encourage rapidity of execution. And instead of spending so much time in copying copies, our scholars should have plenty of practice in depicting familiar objects with a ready pencil.

More attention should also be given to "Memory Drawing," as it directly aids in cultivating the power of observation, and the ability to retain impressions of an object after its withdrawal. There are two distinct ways of exercising a class in drawing from memory: (1) the teacher makes a drawing on the blackboard in the presence of the class, allows a certain time for the pupils to study its details, and then calls on them, either at once or after the lapse of a certain time, to draw it from memory; (2) the teacher sets an object for study in preparation for the next drawing-lesson, directing the pupils meanwhile to practise drawing it from sight, with the understanding that they will be required at the next drawing-lesson to reproduce it from memory.

CHIEF POINTS.—

1. Advantages of learning Drawing.
    - (*a*) It is a capital eye-and-hand training, accustoming the eye to observe minutely and the hand to execute deftly.
    - (*b*) It is likely to have a marked effect upon the artistic taste and finish of the boy's future workmanship.
    - (*c*) Skill in drawing often constitutes the difference between the ordinary workman and the skilled foreman.

CHIEF POINTS.—

2. Young children delight in drawing real objects and in colouring them, but show a distaste for drawing meaningless lines. Hence
   - (*a*) Begin drawing in the Infant School.
   - (*b*) Teach it there informally in connection with real things.
   - (*c*) Try to gratify their love of colour.
3. The exercises in drawing of greatest value to the majority of our scholars are those which train them to sketch objects with facility.
4. "Memory Drawing" cultivates the power of seeing with the mental eye what is no longer actually in view. For the two ways of exercising this power refer to the last paragraph.

OBJECT TEACHING.

1. Chief Aim and Characteristic.—There is an essential difference between a lesson that imparts information about an object by telling the facts and a lesson that helps the learner to gather instruction for himself by an inspection of the object itself. Each lesson may serve a useful purpose, for there are many interesting facts about a thing—such as the habits of an animal, or some of the uses of an object—which the learner cannot gain for himself by direct observation and experience. What is meant, however, by "object teaching" is that which leads the children to learn all that they can by observation and experiment, that is, by inspecting the object itself and by observing how it behaves under experiment. Taking a piece of lead I may learn something of its nature by observing its colour, texture, and weight, and something more by subjecting it to experiment in hammering it and applying heat. In every object lesson there is plenty of room for adding information that the children cannot readily acquire for themselves, but the chief purpose of object teaching is to cultivate the faculty of observation. No object lesson, indeed, is worthy of the name that is not based on an inspection of the object, or some adequate representation of it, at the time of the lesson.

There is, however, a genuine difficulty in carrying out this purpose. The object often is small, and the number of scholars is usually large. To hold up a small object, like an "apple," in front of a large class for them to learn anything about it by the use of their senses is ridiculous; to pass such an object quickly round the class for a hurried inspection is only a shade better. To serve the purpose of "object teaching," either the object must be large enough for all to see easily, or supplied in sufficient quantity for each child to inspect as the lesson proceeds. To get a sufficient supply of the object the aid of the children should be sought.

The best object lesson is undoubtedly one in which the object is there to speak for itself. And this it can do most effectually when able to address itself to the fingers as well as to the eyes of the young learners. A visit to a museum loses half the profit and more than half the charm from the forbidding notice, confronting one at every turn, "Don't touch." This prohibition is an eloquent testimony to a child's natural instinct to acquire knowledge by using his hands as well as his eyes. This instinct should be gratified whenever practicable. Hence a lesson, like one on an "Acorn," which admits of each child having the object, in his own hands, to examine, both outside and inside, best serves the special purpose of object teaching—*the cultivation of the observing powers.*

2. Means of Illustrating.—No object lesson should be given that does not admit of being well illustrated; but it would restrict the choice unduly, if the presence of the object itself were considered indispensable. Of all objects animals are the most interesting to children, but it would seldom be possible to produce the animal itself for their inspection. It would also be unwise to leave all small objects on the shelf, because you are unable to provide the children with a sufficient number for them to examine properly. It seems, therefore, necessary to allow some substitute for the real thing.

Models are often most useful substitutes. When, for instance, the object is too small to be seen clearly, a large model placed by its side will prove efficacious. Models of animals, when well made, are often the best illustrations available. These may generally be supplemented by some part of the animal itself, as the horns and hoofs, the fur or wool, the teeth or skull.

Pictures and drawings on the blackboard are also efficient illustrations when the object is one familiar to the children, although not actually present. In such a case the pictorial representation serves to recall the thing vividly to the mind. Such illustrations as models, pictures, and drawings are even better, in some cases, for class teaching than the thing itself. The enlarged model of a "heart," with accompanying diagrams, is more serviceable for elementary class teaching than the "heart" itself. The object lesson sometimes admits of illustration by experiments than which nothing can be more effective, in competent hands, as the means of teaching by direct observation. Such illustrations, indeed, stand on the same high level as real objects, both of which bring the children into direct contact with the things under investigation, enabling them to get their knowledge at firsthand by the exercise of their senses. Experiments are practically superior to objects for this purpose, as they awaken keener interest, and are watched with more observant eyes.

3. Value of Object Lessons.—These lessons are chiefly valuable as a means of making children more observant, for they induce the young learners to use their eyes both at the time of the lesson and subsequently. Their faculty of observation is not only directly cultivated when under instruction, but the indirect influence of such teaching helps to form in them the habit of observation; for the interest in familiar objects, awakened by the lessons at school, leads the children to examine such objects with thoughtful attention on meeting with them out of school. If a little girl, for instance, becomes interested in the structure of the "Cat" from what she has learnt at school, she is sure to examine minutely the chief features of interest in the cat on her own hearth. Such lessons also loosen the tongues of children, and lead them to tell each other their experiences, and to show each other things, bearing on what they have been taught at school.

If the scholars are to get the full benefit of object teaching, they must be trained to observe *accurately*, and hence the need, as already pointed out, of a good supply of specimens for the children to see and handle without being hurried. But the endeavour to make children accurate in observation ought not to be separated from the endeavour to make them accurate in description. After they have been trained to observe a fact, they should be practised in making an exact statement of it, the teacher supplying any new word that may be required for the purpose. In this way the object lesson becomes an important lesson in language.

Besides the training in accuracy of observation and verbal statement, the object lesson offers other advantages. It furnishes the scholars with useful knowledge, storing their minds with ideas derived at firsthand from real things. It brightens the children's lives by given them an intelligent interest in surrounding things, opening up an attractive field for the exercise of their observing powers. It tends to induce a love of nature, and when the teaching embraces a course of lessons on domestic animals in which the value of their services to man is dwelt upon, it tends also to correct children's proneness to treat such creatures with thoughtless unkindness.

To sum up the value of object lessons when skilfully taught: they open the eyes of a child to the beauties and wonders that surround him; they help to form in him the habit of observation; they induce him to think on what he observes; they give him practice in expressing his thoughts clearly and accurately; they impart useful information and stock his mind with the material for thought; and they serve to make a child's life fuller of interest, to develop in him a love of nature, and a regard for the creatures that subserve the wants of man.

4. Practical Suggestions.—The objects chosen for these lessons should be closely connected with the children's home life and surroundings. Material for such lessons is most easily obtained, and the children's experiences out of school will reinforce the instruction they receive in school. Unless the children are familiar with the objects chosen, they will not be stimulated to observe such things, or to converse with each other about them, in their daily walks. The objects selected for lessons in a town school should therefore differ from those intended for lessons in a country school. The choice must also be regulated, to a certain extent, by the season of the year or the possibility of getting sufficient specimens for the children's inspection, and by the teacher's knowledge and tastes. Whenever feasible, let the teacher choose as the subject of his object lessons what he takes great interest in himself. Happy are the children whose teacher has a hobby on which they can sometimes take a ride! In any case, remember, more good is done in cultivating the habit of observation by the thorough examination of a few objects than by the superficial treatment of many.

Having chosen the object for a lesson, the teacher must make up his mind definitively as to what is and what is not to be taught, remembering that it takes a long time to teach a little well, and that the worth of an object lesson cannot be measured by the amount of information received but by the way in which it has been acquired. In selecting matter for an object lesson, be as chary of your facts as if they were gold-dust.

The order of teaching must be settled beforehand and a definite course marked out, starting at the point of closest contact with previous knowledge and experience, or with that part which is most familiar to the pupils. Attention to this principle will do much to save you from getting into a fixed groove, for it will suggest different openings for different lessons, and this will necessarily involve a different order in the remaining topics. The great thing is to interest the children and to exercise their intelligence, and for this variety and freedom in the mode of treatment are essential. Not only should the topics be taken in a different order with different objects, but sometimes it is wise to combine the topics; for instance, instead of finishing off all we wish to say on the "Qualities" before beginning to speak of the "Uses," it may often be more natural to combine the two. Mere convenience in drawing up "Notes of a Lesson" should not be allowed to determine the order to be followed. Notes should be made for the lesson, not the lesson for the Notes.

One or two suggestions remain to be stated. Give only the characteristic qualities or such as render the object interesting and valuable. Thus, in a lesson on "Cork," treat of its lightness and buoyancy, the ease with which it can be compressed and its tendency to regain its form, omitting such qualities as solid, opaque, and combustible. Whenever practicable, demonstrate by actual experiment the qualities you wish them to notice.

No single lesson should have many technical or unfamiliar terms in it, but in every object lesson it would be well to introduce one or two such terms as the object under consideration best illustrates. "Every lesson," says Dr. Fitch, "brings to light some name or formula which is specially characteristic of the new knowledge you are imparting, and will form a good centre round which recollections will cluster and arrange themselves after you have done." All such terms, names, and formulæ should be distinctly written on the board, and pains taken to leave a clear record of them on the minds of the scholars.

Lastly, lead the children to compare the object under consideration with others already examined; for to know a thing means to know how far it is like, and in what respects unlike, certain other things already known. When this is done, new knowledge is linked on to old, and by that association more clearly understood and more easily remembered.

CHIEF POINTS.—

1. Principal aim to cultivate the faculty of observation.
2. The object should be allowed to speak for itself, and this it can best do when in the hands of each pupil.
3. Models are useful substitutes for objects. Pictures and drawings are also efficient illustrations when the object is a familiar one although not actually present.
4. Experiments are at last equal to the best illustrations, as they awaken keen interest and are watched with observant eyes.
5. Object lessons are valuable as the means of
    - (*a*) Inducing a child to use his eyes both at the time of the lesson and subsequently, thus helping to form the habit of observation.
    - (*b*) Leading him to think on what he sees.
    - (*c*) Giving him practice in expressing his thoughts in clear and accurate language.
    - (*d*) Imparting useful knowledge and storing his mind with ideas gained at firsthand.
    - (*e*) Brightening his life by giving him greater interest in what he sees around him.
6. Practical suggestions.
    - (*a*) Select objects from a child's surroundings.
    - (*b*) Plan your lessons but avoid a stereotyped plan.
    - (*c*) Give only the characteristic qualities of an object.
    - (*d*) In every lesson introduce one or two new terms such as the particular object best illustrates.
    - (*e*) When practicable demonstrate by experiments.
    - (*f*) Constantly compare the new with the old.

INFANT EDUCATION.

CHARACTERISTICS OF YOUNG CHILDREN.

1. **Love of Activity.**—Having already treated of the nature of children, we will only briefly refer to those characteristics of childhood that are most conspicuous at the "Infant Stage," that is, under the age of seven. The love of activity is certainly one of the most prominent features of the young child's nature, leading him to take a delight in using his eyes, fingers, limbs, and voice. He loves in consequence to be always on the move, always engaged in doing something. "A young child," says Froebel, "is primarily a doer, only subsequently a knower." In fact, he learns to know by what he does.

2. **Lively Fancy.**—We cannot watch little children at play without noticing that they have a strong dramatic instinct, which leads them to personate, or play the part of persons or animals. They have evidently a tendency to imitate their elders, and to copy in their games the occupations of grown-up people. In their games, also, they give evidence of a lively fancy, which serves as a fairy-wand to turn dead, shapeless things into forms of life and beauty, as a pumpkin into a gay coach, and a walking-stick into a mettlesome charger.

3. **Inquisitive Spirit.**—Little children have, at the same time, a decidedly practical vein. They instinctively wish to be informed about things around them, and this makes them constantly ask "Why this," and "Why that"; why for instance this horse wears a knee-cap, or that pig has a ring in its snout.

You will observe that their "why" always asks for the practical reason, use or purpose, of what they see; nothing is further from their minds, in asking "why," than a desire to know the ground or reason for any assertion you may make. This inquisitive spirit, which makes little children's enquiries so troublesome to unsympathetic people, but which every wise teacher will welcome, is nature's way of prompting her children to learn about the things she spreads out before them.

4. Desire to See and Touch.—Nor can you have lived much with little children without knowing that they are eager to learn what they can about anything in which you show an interest yourself, if they are permitted to examine it with their own eyes and fingers; that is, they are as ready to question the things themselves as they are to question you. And in thus questioning things they dearly love to touch, they are never content merely to look. If their fingers itch to touch what they see, it is because the sense of touch is one of nature's ways of educating her little ones. And of course every wise teacher will endeavour to imitate her mode of teaching and conform to her laws.

5. Social Instinct.—Lastly, young children take great pleasure in acting in concert with other children, that is to say, their social instincts are strong. The little child in a well-to-do family is to be pitied that has to take its solitary lessons from a governess at home. The natural place for little children, under instruction, is the schoolroom, in which they meet other children of their own age and join with them in work and play—all similarly engaged, all moved by the same impulses, all obeying the same will, and often speaking with one voice.

PRINCIPLES OF EARLY TRAINING.

1. Kindergarten.—We shall find these principles most effectively worked out in Froebel's Kindergarten System. The term "Kindergarten," *children's garden*, indicates that in

Froebel's view a school is a garden with the teacher as the gardener and the children as the plants. As a gardener treats his plants according to their nature, so the Infant Teacher should study the nature of little children, and adapt her mode of teaching to its requirements. As a gardener puts his plants in a position to grow, and carefully tends them with that end in view, so the teacher should foster the growth of her human plants by providing for the orderly development of their whole nature.

In the Kindergarten system due provision is made for the training of a child's faculties from his earliest years. The first years of a child's life have the greatest influence on his future character and career. The power of education, it has been rightly said, is inversely as the age of the child. Early childhood is the time when aptitude for anything is most easily acquired. It is then that deftness in the use of the fingers is most easily gained, the eye most readily trained to measure with accuracy, and a bias given to the whole after-development of the child's nature, whether of head, heart, or hand. "The child is father of the man."

2. Action the Great Teacher.—The system itself is founded on the principle that "Action is the great teacher," that we learn best by what we actually do. What a child sees and feels makes a clearer, truer, deeper impression than what he is simply told, but what he produces with his own fingers makes a still more effective impression. The Infant Teacher should, therefore, not only appeal constantly to the sense of sight and touch, but should go one step further and get the children, when possible, to copy what they see. If she is teaching the little ones a letter, she will not only print the letter on the board, but get them to copy it on their slates. If she is using a ball-frame as an aid to counting and calculating, she will supply each child with a small frame for them to perform the same operation themselves. What they see their teacher do, they should try to imitate. This imitative action forms the keynote of the whole system.

3. Happiness as Sunshine.—If the truth that "*Doing* is the prime instrument of a young child's education," forms the root of Froebel's system, then we may regard as its flower the complementary truth that "Happiness is the sunshine in which the human plants best develop." The blighting influence of a cold unsympathetic teacher on a little child is like that of a biting frost upon a tender plant. The constant aim of the true kindergarten teacher is to fill all her little ones with happiness. Cross looks and hard words are banished from her realm—the law of kindness rules. "Nature in this matter," says Froebel, "points the way, for she has made the healthful exercise of our faculties pleasurable." When she would have us feed the body she gives us the feeling of hunger, the satisfaction of which produces pleasure. It is not safe, however, in providing food, whether mental or bodily, to be ruled entirely by what the children find most to their liking; but it is certainly wise to make good, wholesome food, whether for mind or body, as palatable as we can.

Much of the occupation of our infant scholars may be given under the guise of play and amusement, with the training of the faculties as their end and object; but there should also be a fair proportion of real serious work, as a preparation for what follows on their leaving the Infant School. Our aim should be to make our little ones happy, but happy in their work, happy in doing their duty.

4. The Positive Method.—These two great principles of Froebel's system, relative to "Doing," and "Happiness," are practically inseparable, for it is chiefly by giving fair scope to a child's energies that we minister to his happiness. If we would give free play to a child's spontaneous activity, let us banish the word "Don't" from our vocabulary; let us, at any rate, in our treatment of little children use it as seldom as possible. The positive method is more effectual than the negative. Instead of scolding children and telling them what they are not to do, tell them rather what they are to do, for doing is the law of their nature. Instead of trying to smother their instincts and to bottle up their energies, endeavour rather to turn them to good account by directing them into a useful channel and making them the means of developing their powers.

COURSE OF INSTRUCTION.

1. Code Regulations.—The course prescribed for Infant Schools in the Code of Education includes (1) suitable instruction in the elementary subjects, (2) simple lessons on objects and on the phenomena of nature and of common life, and (3) appropriate and varied occupations. To Froebel is due the credit of being the first to arrange a complete set of materials and occupations suitable to little children, not merely for keeping them out of mischief, but for keeping them happily employed whilst training their faculties. A leaf, and that a large one, is taken out of Froebel's book, in the list of varied occupations for the scholars of Infant Schools, issued by the Education Department, which are intended (1) to give accuracy of hand and eye, (2) to exercise the intelligence, (3) to cultivate artistic taste, and (4) to train children to obedience, self-control, courtesy, and consideration for others. [See *Froebel's* "*Gifts*" and *Varied Occupations* in the Appendix.]

2. Recreative Occupations.—For the last of these purposes the games and movement plays of the Kindergarten are especially valuable. Froebel devised games in which the children imitated the actions of the gentler animals, as rabbits and lambs, or the movements characteristic of common occupations, as those of the farmer and miller. These imitative actions were usually accompanied by rhymes sung by the children. In all these recreative occupations there is need of great variety, for as soon as they have lost their freshness they cease to give pleasure. And in all these games, calling for concerted action, there is need of some central authority sufficiently firm to keep all the players in their places, to check the forward and encourage the timid, and to insist on strict attention to the rules laid down. In the happy result that follows from obedience to rule, the children are impressed with the beauty of law and order, and with the advantage that accrues from each contributing his share to the general happiness instead of seeking his own selfish enjoyment regardless of others.

3. Association of Lessons.—The association of one lesson with another in the different branches of the prescribed course is strongly recommended as a means of giving greater interest, of assisting the memory, and cultivating the intelligence. "The reading lessons, occupations, and object lessons may all be usefully combined for one purpose: *e.g.*, if the teacher wishes to impress on her class some knowledge of a domestic animal, she may usefully combine the object lesson for general study of its structure; the reading lesson for a knowledge of its habits and character; some occupation, such as pricking the outline, to impress an exact knowledge of its form; a song, or simple story bearing on its association with human life; so that through familiarity with animals, especially with domestic animals, a kind treatment of them may be fostered." [See *Instruction of Infants* in the Appendix.]

The particular course of instruction adopted may vary with the tastes and judgment of the responsible teacher, but what should remain invariable in every Infant School in the country is what may be regarded as the great aim of all infant education—"the harmonious and complete development of the whole of a child's faculties." *What* little children learn is comparatively of little moment; *how* they learn it is almost everything.

CHIEF POINTS.—

1. Chief characteristics of young children:
    - (*a*) A love of activity—inability to keep still.
    - (*b*) A strong dramatic instinct.
    - (*c*) A desire to know the use and purpose of things.
    - (*d*) A readiness to examine things by sight and touch.
    - (*e*) A strong social instinct.
2. Importance of early education: the power of education is inversely as the age of the child.
3. The two great principles of the kindergarten:
    - (*a*) Doing is the prime instrument of a young child's education.
    - (*b*) Happiness is the sunshine in which the human plants best develop.
4. The Infant School course embraces—
    - (*a*) Suitable instruction in the elementary subjects.
    - (*b*) Simple lessons on objects and common phenomena.
    - (*c*) Appropriate and varied occupations.
5. The occupations are designed—
    - (*a*) To give accuracy of hand and eye.
    - (*b*) To exercise the intelligence.
    - (*c*) To cultivate artistic taste.
    - (*d*) To inculcate obedience, self-control, and courtesy.
6. The great aim of all infant education is "the harmonious and complete development of the whole of a child's faculties." *How* a little child learns is much more important than *what* it learns.

RELIGIOUS INSTRUCTION.

1. Its Supreme Importance.—If a teacher would avoid the painful experience of his work being to him a species of drudgery creating the sense of wearisome monotony, let him seek to make it the means of moulding character, of influencing aright a child's motives, of inspiring him with high aims, of fostering right feelings and instilling true principles. Direct religious instruction, though not the sole way of furthering these high purposes, is undoubtedly the most efficacious. And when the duty of giving it is performed in the right spirit, it assuredly lifts the teacher's work to a much higher level. There is a world of difference between the man who endeavours to sow the seed that shall bear fruit both here and hereafter, and the one who labours only for immediate results that can be measured and have their value assessed. It is this thought which has led many a teacher in effect to say, "If I were not permitted to give religious instruction, I should feel my work placed on a much lower plane and myself almost degraded."

The influence gained by religious teaching is also a great aid to discipline. The daily Scripture lesson, in the hands of a competent and conscientious teacher, is no small support to his authority. The children associate with such a teacher, insensibly and unconsciously, thoughts and feelings of a sacred character, and this has the effect of deepening for him their respect and love, feelings which form no inconsiderable barrier to disobedience and misconduct.

If then we are wise, we shall hold fast to the duty of giving religious instruction to our scholars as a privilege to be highly valued, as that which more than aught else raises our work above the ordinary routine of business, such as falls to the lot of most men who have to labour for their daily bread. To be deprived of the right of imparting religious knowledge would certainly be a degradation of our office, if not of ourselves.

2. Character of the Instruction.—For the Bible lesson to have its legitimate effect, it must be given in a religious spirit and made the occasion of real religious instruction; for it is quite possible to treat a lesson from the Bible on the same level as a lesson in secular history. To give it a distinctively religious character it is essential, in the first place, that the manner of the teacher should be earnest and reverential without being dull or preternaturally serious and solemn, and that he should be careful, in preserving the order and attention of his class, not to make unseasonable remarks or interject calls to order at inopportune times. Let him rather pause and address a few words of warning to the class in a quiet impressive way and then resume his teaching.

In the next place, the teacher should make the facts of Holy Writ the basis of definite lessons of faith and duty, applying them to the circumstances, present and prospective, of his pupils. But in giving such lessons let him beware of unreality, such as arises from exaggerated statement, and also of surfeiting the children with too much talk on religious topics. Much harm is done by *dinning* religious truths and duties into the minds of children. In giving a lesson on some Bible narrative to little children, it is quite sufficient to deduce from the facts just *one* truth or practical duty, bringing it home to the conscience and understanding of the young learners by reference to their common experience. And that truth or duty should be the one which the particular subject in hand is especially designed to teach. With the older children more might be safely attempted in the way of direct religious teaching.

3. Forms of Instruction.—Happily the time has gone by when the Bible was used as a mere class-book for teaching reading. It is still, however, sometimes unwisely used as the medium of religious instruction before the children have acquired facility in reading. When the attention of the readers is almost engrossed in making out the words, it is of course impossible for them to gain a vivid impression of the sense, whilst the blunders made in reading and their necessary corrections tend to produce irreverence. In the lower classes, therefore, religious knowledge should always be given in the form of oral lessons, which will be found the most effective form of instruction in all classes whenever the numbers are large.

At the same time it is desirable to give the senior children an opportunity of getting at least a part of their religious knowledge, at firsthand, from the Bible itself; for the knowledge thus gained is likely to be more accurate, and the scholars are thus trained to study the Bible for themselves. Sometimes the two forms of instruction may be combined in the same lesson, the Bible being read by the children to supplement and impress the oral instruction just given, a mode of treatment particularly well suited to the parables and miracles.

Of that form of instruction contained in the Church Catechism and similar manuals, it is not my intention to speak. Such catechisms enable us to give religious instruction, in faith and duty, in a very definite form, and in a more systematic and complete order than would otherwise be possible. I will only venture to remark that however valuable, in consequence, such a form of instruction may be, the spirit in which the religious instruction is given, whether with a catechism or without, is after all the one essential thing.

APPENDIX.

CRITICISM OF A LESSON.

SPECIMEN NOTES OF LESSONS.

HINTS ON TEACHING CERTAIN RULES OF ARITHMETIC.

FAULTS TO BE AVOIDED.

INSTRUCTION OF INFANTS.

VARIED OCCUPATIONS (INFANTS).

FROEBEL'S "GIFTS."

SUITABLE OCCUPATIONS (LOWER STANDARDS).

WORD BUILDING AND SPELLING.

QUESTIONS SET AT THE QUEEN SCHOLARSHIP EXAMINATION.

PAPERS SET TO FIRST YEAR STUDENTS.

CRITICISM OF A LESSON.

I. THE LESSON.

1. Subject-matter.

- (*a*) Selection.
- (*b*) Arrangement.
- (*c*) Accuracy.
- (*d*) Amount.

2. Method.

- (*a*) *Exposition.*
  - (1) Extent to which used.
  - (2) Clearness.
  - (3) Fluency.
  - (4) Impressiveness.
- (*b*) *Questioning.*
  - (1) Extent to which used.
  - (2) Structure and sequence of the questions.
  - (3) Their presentation.
  - (4) Their distribution.
  - (5) Reception of the answers.
- (*c*) *Illustrations.*
  - (1) Verbal—whether apt and familiar.
  - (2) Visible—whether suitable, sufficient, and well-handled.
- (*d*) *Blackboard.*
  - (1) Notes—as to their amount, arrangement, style, and time of writing.
  - (2) Drawings and Maps—how and when executed.

II. THE TEACHER.

1. Language.

- (*a*) Diction.
- (*b*) Articulation.
- (*c*) Pronunciation.
- (*d*) Tone of voice.

2. Manner, whether

- (*a*) Quick and animated.
- (*b*) Earnest and energetic.
- (*c*) Patient and kindly.
- (*d*) Vigilant and tactful.

3. Common Faults, whether

- (*a*) Attempting too much.
- (*b*) Losing time.
  - (1) By long or fanciful introduction.
  - (2) By needless digression.
  - (3) By unnecessary definitions.
  - (4) By "marking time" instead of steadily advancing.
- (*c*) Talking incessantly.
- (*d*) Failing to drive home the principal points.

III. THE CLASS.

1. Interest and attention.
2. Order and discipline.
3. Mental activity.
4. Amount of knowledge gained.

N.B.—This form of criticism is intended to indicate the points to be observed, but no attempt should be made in criticising the lesson to say something on each of them. It is far better to fix the attention on such points as are distinctly good or bad, and to pass over all the rest without remark.

SPECIMEN NOTES OF LESSONS.

AN ORAL LESSON
ON
FEEDING THE FIVE THOUSAND.

Standard VI. or VII.

FACTS AND LESSONS.	NOTES AND ILLUSTRATIONS.
I. Narrative.	
1. CIRCUMSTANCES PREVIOUS TO THE MIRACLE.	
(*a*) Crossing to the east side of Lake Gennesareth to seek rest and retirement.	(*a*) They went there because that side was sparsely peopled. Show lake on map of Palestine.
(*b*) An expectant multitude waiting on the beach.	(*b*) These had gone by land, crossing the river above the lake. Draw sketch-map of lake.
(*c*) Jesus had pity on them and taught.	(*c*) Christ came for rest and found work.
(*d*) There were present 5000 men besides women and children.	
(*e*) The scene of the Miracle was "a desert place" near Bethsaida.	(*e*) This "desert place" was not a sandy waste, but simply a solitary place void of houses. "There was much grass in the place."
2. PREPARATION FOR THE MIRACLE.	
(*a*) Apostles' request to dismiss the multitude.	(*a*) They were anxious the people should go and buy food for themselves before it grew dark.
(*b*) Our Lord's question to Philip and his reply.	(*b*) Christ by His question wished to prove Philip, or test his faith.
(*c*) Andrew's remark that they can only obtain five loaves and two small fishes.	
(*d*) Our Lord's command to make the men sit down.	(*d*) Picture out the scene—the long green grass—the men sitting in groups of hundreds and fifties—looking like garden plots with paths between.

Facts and Lessons.	Notes and Illustrations.
3. Blessing and Distribution. (*a*) Jesus first gave thanks. (*b*) Then He gave the food to the disciples. (*c*) The disciples distributed it to the people. (*d*) All had as much as they would.	(*c*) It would be interesting to know when the increase took place, but we are not told—probably, in the hands of the apostles.
4. Gathering of the Fragments. (*a*) The command—"Gather up the fragments," &c. (*b*) The large quantity gathered.	(*b*) Twelve large baskets were filled, each apostle apparently taking a basket.
5. Effect of the Miracle. (*a*) The people believed in Jesus as the Messiah. (*b*) They wished to make Him their King on the spot.	(*a*) The Messiah, that great prophet which the Jews expected at that time. (*b*) They thought that the Messiah, when He came, would reign as a king.
II. Practical Lessons.	
1. The Duty of Thankfulness and Thanksgiving. We must not only feel grateful in our hearts, we must also show our gratitude in word and deed.	1. Hence the duty of saying grace before and after meat, God expects us to acknowledge His good gifts. Refer to miracle of the Ten Lepers.
2. The Sin of Wastefulness: (*a*) It is a slight on God's good gifts. (*b*) It is an act of selfishness.	2. (*a*) What should we think if we had given a child a pretty book as a present, and found it lying about torn and dirty? (*b*) Because it shows a disregard for the wants of others.

NOTES FOR THE BLACKBOARD.

Facts. Bethsaida E. of L. Gennesareth.
[Here draw sketch-map of Lake.]
Philip's reply. Andrew's remark.
5000 men seated in groups of 50 and 100.
5 loaves and 2 fishes.
12 baskets of fragments.
Lessons. 1. Duty of thankfulness and thanksgiving.
2. Sin of wastefulness.

ISLANDS AND PENINSULAS.

Standard I. or II.

I. Explanation with Aid of Model.

1. ISLANDS.

(*a*) Introduce model representing land and sea with a few islands and peninsulas, care having been taken to make them of different sizes and shapes.

(*b*) Test the children on their power to distinguish land from water, and to point out such portions of land as a boat could sail round.

(*c*) Then give the term "island," and let children frame definitions with teacher's help. Definition to be written on blackboard by the teacher and learnt by the children.

(*d*) Let a child then point out all the islands on the model.

2. PENINSULAS.

(*a*) Draw attention to one of the peninsulas (without mentioning the term) and lead children to discover that a boat could sail nearly round it. A child to point out part where boat could not sail.

(*b*) Now cut through this part and let in the sea by a little manipulation of the model—and children will see that we have formed an island—restore the model to its original form, and they will see that the piece of land in question is almost an island.

(*c*) Then give the term "peninsula" as the name of any such piece of land, and write it on the board.

(*d*) Get a child to point out any other peninsula on the model—ask the class why they think it is one—and which part must be cut through to turn it into an island. Proceed similarly with the remaining peninsulas of the model.

(*e*) Children now to be asked how a peninsula differs from an island, and to form a definition of the former with the teacher's help. Definition to be written on board and committed to memory.

II. Exercises with Maps and Diagrams.

1. MAP ON BLACKBOARD.

(*a*) Teacher will sketch map from his model, getting children to compare the two as the work proceeds.

(*b*) Islands and peninsulas on map will be pointed out by selected children, or named when pointed out by the teacher.

2. COLOURED DIAGRAM, designed as an illustration of geographical terms, will now be introduced and children tested in naming the two features when pointed out, or in pointing them out when named.

3. MAP OF ENGLAND, being set before the class, examples of "island" and "peninsula" will be sought for by the class. For the sake of concentration their attention will be restricted to one coast and one feature at a time, *e.g.*, the islands off the south coast.

FIRST LESSON
IN
SIMPLE DIVISION WITH REMAINDERS.

Standard II.

Example: 673 ÷ 5.

OBJECT OF LESSON. To help the class to find out how to deal with remainders.

KNOWLEDGE ASSUMED. Meaning of Division and ability to divide without remainders.

APPARATUS. Six bundles of sticks each containing 100, seven bundles of 10, and three separate sticks.

METHOD.	BLACKBOARD WORK.
I. Work to be done. 1. Write the question in concrete form. 2. Let a child read the question, and see that all clearly understand what is required. 3. Set down the sum as in Long Division. 4. Lead the children to see that they have to find out three things: how many hundreds, tens, and ones each is to receive.	Divide 673 nuts equally among 5 children. HTU 5)673(N.B.— The Long Method is taken for explaining the process because all the working is shown.
II. Long Method of Working. 1. NO. OF HUNDREDS FOR EACH CHILD. (*a*) Call out five children to the front of the class. (*b*) Take the six bundles of 100, and ask how many bundles you can give to each child. (*c*) Then give one bundle of 100 to each, and ask how many of such bundles remain. (*d*) Then work the corresponding part of the sum.	HTU H 5)673(1 5 ― 1
2. NO. OF TENS FOR EACH CHILD. (*a*) Ask how many tens you have to divide. This is easily discovered to be 17, if the remaining bundle of 100 is made up, as it ought to be, of ten bundles of 10. (*b*) Taking these 17 bundles of ten, ask how many bundles you can give to each, and give to each child the specified number. (*c*) Ask how many bundles of ten remain, and work the corresponding part of the sum.	HTU HT 5)673(13 5⁝ ― 17 15 ― 2

METHOD.	BLACKBOARD WORK.
3. NO. OF ONES FOR EACH CHILD. (*a*) Ask how many *ones* remain to be divided. By untying the two bundles of 10 you will easily show that 23 ones remain to be divided. (*b*) Lead children to see how many ones you can give to each, and how many remain. (*c*) Give each child the required number, and work the corresponding part of the sum. (*d*) Have the answer read and written.	HTU HTU 5)673(134 5 17 15 23 20 3 Answer: 134 nuts each, and 3 over.
III. Short Method of Working. 1. Set down the same sum according to the Short Method, and question on the difference of form. 2. Work the sum by the Short Method, carefully comparing each step with the corresponding one in the Long Method. *NOTE.—It is quite unnecessary to use the sticks in doing this. And no "carrying" figures should be set down.*	HTU 5)673 134 + 3 Answer: 134 nuts each, and 3 over.

AN OBSERVATION LESSON.

A Burning Candle.

Standard IV.

OBJECT OF LESSON.—To train children to observe and reason.

KNOWLEDGE ASSUMED.—Nature of Combustion and Capillary Attraction.

APPARATUS.—Two candles, box of matches, piece of wire-gauze, piece of white cardboard, a little glass-tubing, a pair of tweezers, and a white plate.

EXPERIMENTS.	FACTS OBSERVED.	INFERENCES.
1. Light a candle.	Tallow melts and a cup-like hollow is formed. In the centre of the flame appears a dark cone.	Heat of burning wick melts the tallow. The dark cone is apparently not burning.
2. Scrape a little of the charred match into the melted tallow-cup.	Some of the black particles rise up the wick.	The particles are carried up by the melted tallow, which therefore rises up the wick by capillary attraction.

EXPERIMENTS.	FACTS OBSERVED.	INFERENCES.
3. Blow out the candle.	A sort of "smoke" rises.	This "smoke" must be given off by the burning wick or the melted tallow in it. [Let us try to discover its origin.]
4. (*a*) Light a fresh candle—one not previously lighted—blow out the flame before it has had time to melt the tallow, and apply a light to the smoke.	It fails to burn.	The "smoke" in the second case contains the melted tallow vaporised or turned into gas. It is this burning "tallow-gas" which causes the flame of a candle.
(*b*) Blow out the flame of a candle that has been burning some time, and apply a light to the "smoke."	It immediately ignites.	
5. With tweezers bend the end of the burning wick into the cup of melted tallow.	The light is extinguished.	Tallow will not burn until it is vaporised.
6. (*a*) Hold wire-gauze low on the flame and apply a light above the gauze.	The flame appears hollow and from the dark centre rise fumes which will ignite.	The dark central cone is full of unburnt gas. [Let us try to discover something of its nature.]
(*b*) Hold one end of a short piece of tubing in the dark cone close to the wick.	The gas issues as dense smoke from the other end of the tube.	
7. Hold a cold white plate low on the flame.	Soot is deposited.	This soot is unburnt carbon which forms a part of the vaporised tallow.
8. Hold a piece of white cardboard steadily and low on the flame for a second or two.	Carbon is deposited in a ring. (1) Sparsely round the centre. (2) Densely next the central portion. (3) Gradually less dense as it nears the outer edge.	In (1) the carbon is just beginning to be given off from the melted tallow in the wick. In (2) the carbon is now freely given off but not yet burnt. In (3) the carbon is being burnt.

SUMMARY FOR BLACKBOARD.

1. Lighted wick melts the tallow.
2. The melted tallow ascends the wick by capillary attraction.
3. In the centre of the flame is a dark cone.
4. This dark cone is filled with vaporised tallow.
5. The vaporised tallow consists partly of carbon.
6. The carbon is consumed in the outer part of the flame.

PARTICIPLES.

Standard V.

Aim of Lesson.—To enable the scholars to discover the nature, and form the definition, of Participles.

Knowledge Assumed.—Voice, Mood, and Tense of Verbs.

Matter and Method.	Blackboard Notes and Illustrations.
I. Nature of Participles.	
1. Sentences with present participles. (*a*) Write sentence (1) on blackboard and by questioning lead pupils to see that *rising* is of the nature of a verb and an adjective, since it expresses action and qualifies a noun. (*b*) Deal similarly with sentences (2) and (3). (*c*) Collect the words underlined and write opposite = Verb + Adjective.	(1) I see the sun rising over the hill. (2) An apple falling on my head awoke me. (3) Fearing the dog, the hare ran off. rising falling } = Verb + Adj. = Participles* fearing
2. Sentences with past participles. (*a*) Write sentence (4) on blackboard and lead pupils to see that *painted* is equivalent to a Verb and an Adjective. (*b*) Proceed similarly with sentences (5) and (6). (*c*) Collect the words underlined and write opposite = Verb + Adjective.	(4) The pictures painted by Raphael are beautiful. (5) The boys picked to play football are happy. (6) I have found the knife lost yesterday. painted picked } = Verb + Adj. = Participles.* lost
II. Name and Definition.	
1. Introduce the term *Participle* as applicable to all the words underlined and write it opposite Verb + Adj.	1. See * above.
2. Give the reason for the term.	2. A participle is partly like a verb and partly like an adjective.
3. Educe the definition and write on the board (*a*) A participle is partly like a verb and partly like an adjective. (*b*) It may therefore be called a verbal adjective.	3. A participle is, therefore, a verbal adjective.

MATTER AND METHOD.	BLACKBOARD NOTES AND ILLUSTRATIONS.
III. Kinds of Participles.	
1. Compare the two sets of examples on the board, and lead pupils to see that they differ in tense, marking the tenses on the board.	rising falling } Present fearing painted picked } Past lost
2. Compare again and educe that they differ in voice, the former being active and the latter passive. Show on blackboard.	rising falling } Active fearing painted picked } Passive lost
3. Hence lead to conclusion that participles are of two kinds— (*a*) Present Active } Participles (*b*) Past Passive Show clearly on the blackboard.	Participles of two kinds: (1) Present Active. (2) Past Passive.

IV. Exercises.

1. Give a few sentences orally requiring pupils to pick out the participles and to name the voice and tense.

2. Let children form participles (present and past) from given verbs, the teacher writing in tabular form on the blackboard (see opposite).

3. Explain the mode of parsing participles and have a few parsed by the class.

VERBS.	PARTICIPLES.	
	PRESENT.	PAST.
play	playing	played
rob	robbing	robbed
light	lighting	lighted
write	writing	written
speak	speaking	spoken
eat	eating	eaten
make	making	made
catch	catching	caught
strike	striking	struck

LENGTH OF WALL-PAPER REQUIRED.

Standard VI. or VII.

Object of Lesson. To find the length of paper required to cover the walls of an oblong room.

Previous Knowledge. Ability to find the length, breadth, or area of an oblong, when two of these particulars are given.

Apparatus. Two pairs of oblong pieces of cardboard, a roll of wall-paper, and a foot-rule.

I. Introduction. State object of Lesson, and lead pupils to see that the quantity of paper required depends on the area of the walls, which must therefore be found first.

II. Rule for finding area of the Walls.

1. Longer Method.
   - (*a*) Take four pieces of cardboard to represent the walls; elicit that there are two pairs of walls, and that to find the area of the four we must find the area of one longer and one shorter wall, add together, and double. Proceed to do this with the cardboard walls:
   - (*b*) To find the area of the longer wall
     - (1) Get its dimensions by actual measurement, 14 in. by 10 in.
     - (2) Calculate its area = 14 in. × 10 in. = 140 sq. in.
   - (*c*) Proceeding similarly with one of the shorter walls—
     We find its area = 12 in. × 10 in. = 120 sq. in.
   - (*d*) Hence the area of the walls = (140 sq. in. + 120 sq. in.) × 2 = $\underline{\underline{520}}$ sq. in.

2. Shorter Method.
   - (*a*) Placing the 4 pieces of cardboard, end to end, so as to represent one long wall, show that the four walls form an oblong whose area may be found by multiplying the length by the height.
   - (*b*) Length of the extended wall = length of the four walls.
   - (*c*) Length of the 4 walls is double the length of one long and one short wall added together = (14 in. + 12 in.) × 2 = 52 in.
   - (*d*) Height of the walls is 10 in.
   - (*e*) Hence area of the 4 walls = 52 in. × 10 in. = $\underline{\underline{520}}$ sq. in.

3. The Rule.

   Having shown that the length of the 4 walls is the same as the circuit of the room, deduce from the above results the following rule: Find the circuit of the room and multiply by the height. [Write this rule on the blackboard and leave it there for reference.]

III. Application of the Rule.

If the class is assembled in a class-room of the right shape, an air of reality is given to the lesson by finding the area of its walls, and for this purpose—

1. Show what dimensions are required and have them taken by actual measurement, omitting odd inches.

2. Assuming that the length is 20 ft., the breadth 15 ft., and the height 12 ft., the pupils will be led by questioning to the following results:
   (*a*) Circuit of the room = (20 ft. + 15 ft.) × 2 = 70 ft.
   (*b*) Area of the room = 70 ft. × 12 ft. = $\underline{\underline{840}}$ sq. ft.

IV. Mode of finding paper required.

1. Suppose we wish to paper the entire walls of the above room, leaving out of consideration, *at present*, the windows, doors, and fireplace.

2. Take roll of wall-paper and lead the scholars by questioning to reason out the problem, thus:
   (*a*) Area of paper must equal area of walls.
   (*b*) Area of paper depends on its length and breadth.
   (*c*) Its breadth is a fixed quantity, namely $1\frac{3}{4}$ ft. (ascertained by actual measurement by one of the scholars).
   (*d*) The question is what length of paper $1\frac{3}{4}$ ft. wide will have an area equal to the walls, that is, 840 sq. ft.

3. Since Area = length × breadth.
   Length = area ÷ breadth (Pupils know this from previous lesson).
   ∴ Length of paper required = 840 sq. ft. ÷ $1\frac{3}{4}$ ft.
   $= 840 \times \frac{4}{7} = 480$ ft.
   $= \underline{\underline{160}}$ yards.

HINTS ON TEACHING CERTAIN RULES OF ARITHMETIC.

SIMPLE SUBTRACTION.

The two methods most in favour are (1) Decomposition, (2) Equal Additions.
Of course only one should be taught or even mentioned to the class.
The former is the easier to explain, the latter to work.

Decomposition.

1. Take as an example: From 27 take 19.
2. Show how to set it down.

T	U
2	7
1	9

3. Lead children to discover the difficulty.
4. Show how this may be overcome by rewriting the sum in this way.

T	U
1	17
1	9

5. Then subtract and see that the children can state clearly the various steps.

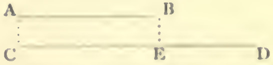
This method presents no difficulty so long as there are no ciphers in the minuend. On account of the practical difficulty which arises with ciphers, it is better to adopt the other method.

Equal Additions.

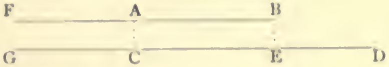
1. Principle. This method is based on the principle: "The difference between two numbers is unaltered if we add the same number to each of them." Of course this principle is not to be mentioned in abstract terms, but the idea is to be conveyed by means of visible illustrations and concrete examples:

[It is assumed that the children have been taught that the object of subtraction is to find the difference between two numbers, and that they are able to subtract numbers which require no alteration].

2. Visible Illustration.
   (*a*) Draw two unequal lines A B and C D, placing C directly below A.



   (*b*) Show that D E is their difference.
   (*c*) Then add say one inch to each line.



   It will be seen (1) That D E is the difference as before. (2) That the difference between two lines is unaltered by adding the same length to each of them.

3. OTHER ILLUSTRATIONS.

(*a*) John is three years older than James, at the end of 6 years the difference will be the same. Work this out clearly on the blackboard, supposing John is now 10 and James 7. Show that however many years they live, the difference will be always the same.

(*b*) Write two numbers on the board, add the same number to each, and subtract, forming a series like this:

$$\begin{array}{cccc} 5 & 7 & 10 & 15 \\ 2 & 4 & 7 & 12 \\ \hline 3 & 3 & 3 & 3 \\ \hline \end{array}$$

4. INFERENCE. In a subtraction sum, if I add 10 to the upper line and 10 to the lower line it makes no difference to the answer.

5. APPLICATION OF PRINCIPLE.

(*a*) Take as an example: From 27 take 19.

(*b*) Show how to set it down.

T	U
2	7
1	9

(*c*) Lead children to discover the difficulty

(*d*) Show how this may be overcome by adding 10 to each line, thus—

T	U
2	17
2	9

(*e*) Then subtract and see that the children can state clearly the various steps.

NOTE 1. In teaching little children it is generally best, in explaining the principle, to take small numbers, and having found the rule, to apply it to higher numbers without further investigation for the present.

NOTE 2. Minute graduation is one of the secrets of success. Take the following series as an example of short steps; only one new point being taken at a time.

WITHOUT ALTERATION—

$$\begin{array}{rrrr} (1)\ 789 & (2)\ 789 & (3)\ 709 & (4)\ 790 \\ 345 & 304 & 306 & 80 \\ \hline \end{array}$$

WITH ALTERATION—

$$\begin{array}{rrrrrr} (5)\ 78 & (6)\ 384 & (7)\ 304 & (8)\ 370 & (9)\ 307 & (10)\ 4307 \\ 19 & 192 & 182 & 80 & 98 & 908 \\ \hline \end{array}$$

N.B.—The term "Alteration" is here used instead of the discredited term "Borrowing."

SIMPLE MULTIPLICATION.

In the first lesson base your teaching on addition. Explain the nature and use of this rule by working an easy example (1) by addition (2) by multiplication.

Stages.

Teach in four stages: (1) with multiplier not exceeding 12.
(2) ,, ,, an easy multiple of 10.
(3) ,, ,, not exceeding 99.
(4) ,, exceeding 99.

FIRST STAGE. The first stage presents no difficulty, but great care and skill are needed to make the children in the second stage understand the ordinary method of multiplying by 20, 30, &c.

SECOND STAGE. *To multiply* 745 *by* 20.

(1) See that children know that this means to find 20 times 745.

(2) Tell them we first find 10 times.

(3) Then lead them to see that to get 20 times from 10 times we must multiply by 2.

(4) Then show them that this result can be obtained by reversing the multipliers.

(5) See that they know that the effect of adding 0 to the right is to multiply by 10.

(6) Lastly, show how this sum can be done in one line.

745
10
7450 = 10 times 745
2
14900 = 20 ,, 745

745
2
1490 = 2 times 745
10
14900 = 20 ,, 745

745
20
14900 = 20 times 745

THIRD STAGE. *To multiply* 274 *by* 45.

(1) See that children understand that they have to find 45 times 274.

(2) Lead them to see that this can be done, first, by finding 40 times, then 5 times, and adding the results together.

(3) Proceed to do this:

274
40
10960 = 40 times 274

274
5
1370 = 5 times 274

1370 = 5 times 274
10960 = 40 ,, ,,
12330 = 45 ,, ,,

(4) Then show that the ordinary method is equivalent to this:—

274
45
1370
1096
12330 = 45 times 274

Alternative Methods.

It is advantageous in many ways to teach the children to work the same sum by different methods, for they will better understand the process, they will be able to prove their sums, and will take greater interest in the work. The above sum, for instance, should be worked in one or both of the following ways:

274
5
1370 = 5 times 274
9
12330 = 45 ,, ,,

274 × 5
10
2740 = 10 times 274
4
10960 = 40 ,, ,,
1370 = 5 ,, ,,
12330 = 45 ,, ,,

SIMPLE DIVISION.

Uses of the Rule: (*a*) It enables us to divide a quantity into a certain number of equal parts; (*b*) It enables us to find how often one number is contained in another. Since (*a*) is applicable to concrete examples and (*b*) to abstract numbers, it is advisable to say nothing of the latter until the time has come for dividing abstract numbers.

Stages. Teach in three stages:

(*a*) With divisor not exceeding 12, first without carrying figures, then with.
(*b*) With divisor resolvable into two factors, neither exceeding 12.
(*c*) With divisor requiring Long Division.

First Stage. For specimen of teaching *vide* Notes of Lesson on p. 182.

Second Stage (Factors). In the first lesson on dividing by factors—

(*a*) See that pupils understand the meaning of factors.
(*b*) Work a sum without factors and then the same sum with factors:

$$\begin{array}{r} 12\,\underline{)\,465} \\ \underline{\underline{38 + 9}} \end{array} \qquad 12\left\{\begin{array}{c} 6 \\ 2 \end{array}\right. \left|\begin{array}{l} \underline{465} \\ \left.\begin{array}{l} \underline{77}\text{ sixes} + 3\text{ units} \\ \underline{\underline{38}}\text{ twelves} + 1\text{ six} \end{array}\right\} = 9 \end{array}\right. \qquad 12\left\{\begin{array}{c} 4 \\ 3 \end{array}\right. \left|\begin{array}{l} \underline{465} \\ \left.\begin{array}{l} \underline{116}\text{ fours} + 1\text{ unit} \\ \underline{\underline{38}}\text{ twelves} + 2\text{ fours} \end{array}\right\} = \end{array}\right.$$

Answer: 38 twelves and 9 over.

(*c*) Work three or four sums with factors in this way before trying to elicit a rule for determining the remainder.

Third Stage (Long Division). In explaining the method take as divisor any number not exceeding 12, and work each sum by both Short and Long Division, comparing each step. The great difficulty in working the sums, after the method has been learnt, is to find the trial figure. To make the early steps as easy as possible the divisors at first should be near some multiple of ten, *e.g.*, 19, 21, 29, 31, &c. In dividing, for instance, by 29, the class would find how often 30 would go and take that as the trial figure.

Special Case. Children are accustomed in bringing shillings to pounds to divide by 20, by cutting off the right-hand figures, without understanding the process. This abbreviated method should come to the children as the result of their observation in dividing by factors, thus:

To divide 756 by 20.

(*a*) First work the sum by factors.

$$20\left\{\begin{array}{c} 10 \\ 2 \end{array}\right. \left|\begin{array}{l} \underline{756} \\ \left.\begin{array}{l} \underline{75}\text{ tens} + 6\text{ units} \\ \underline{\underline{37}}\text{ twenties} + 1\text{ ten} \end{array}\right\} = 16\text{ over.} \end{array}\right.$$

(*b*) Then show that cutting off the right-hand figure is equivalent to dividing by ten, giving us 75 tens + 6 units.

$$75.6 = 75\text{ tens} + 6\text{ units.}$$

(*c*) Lastly, work the sum by the short method and compare step by step with the sum as worked above.

$$\begin{array}{l} 2.0\,\underline{)\,75.6} = 75\text{ tens} + 6\text{ units.} \\ \quad 37\text{ twenties} + 1\text{ ten} + 6\text{ units.} \\ = 37\text{ twenties} + 16\text{ over.} \end{array}$$

COMPOUND RULES (Money).

In teaching Addition and Subtraction it is desirable, in the first instance, to illustrate by means of Coins or Counters.

It is wise to give a practical turn to the work. Thus in exercising the class in Addition, long columns should sometimes be given with small sums such as occur in a shopkeeper's accounts. And the prices mentioned in the questions for different articles should be approximately correct.

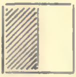
It is often well to have the same sum worked by different methods; thus in multiplying £7 14 6 by 48, it might be worked by taking as factors (1) 12 and 4; (2) 6 and 8; (3) 10 and 4 + 8 times £7 14 6. In dividing £7 14 6 by 48, it might be worked (1) by factors; (2) Long Division. Children like to compare, and are interested in reaching the same result in two ways.

WEIGHTS AND MEASURES.

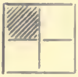
Each table should be thoroughly understood and learnt by heart before it is wanted in working sums, real weights and measures being used as far as practicable in explaining the tables.

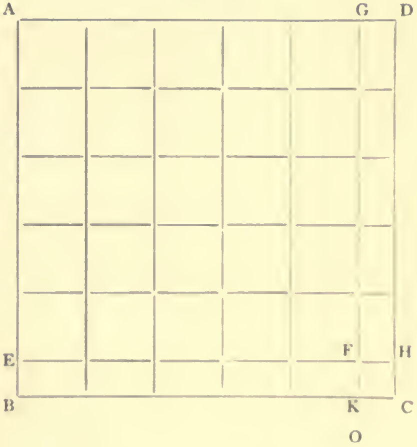
The children should be taught by means of a series of diagrams to discover for themselves from inches, feet, yards, and poles in Long Measure, the corresponding numbers in Square Measure. The only difficulty is in deriving 30¼ from 5½. This may be taught as follows:

(*a*) Show by a diagram that an oblong 1 yd. by ½ yd. = ½ sq. yd.



(*b*) Show by a diagram that an oblong ½ yd. by ½ yd. = ¼ sq. yd.





(*c*) Show by a diagram that a square 5½ yds. long contains 30¼ sq. yds.

(1) A E F G = ... 25 sq. yds.

(2) G F H D = 5 half yds. } = 5 sq. yds.
(3) E B K F = 5 half yds. }

(4) F K C H = ... ¼ sq. yd.

Hence whole Square = 30¼ sq. yds.

The only difficulty in the mechanical working of the sums in Weights and Measures is connected with the numbers $5\frac{1}{2}$ and $30\frac{1}{4}$. The following is the best way to arrange the working in dividing by these numbers:

$$\begin{array}{l} \qquad\text{yds.}\\ 5\frac{1}{2})4809\\ \;\;\underline{2}\quad\underline{\;\;2\;\;}\\ 11)\underline{9618}\text{ half yds.}\\ \qquad 874 + 4\text{ half yds.} = 2\text{ yds.} \end{array}$$

Answer: 874 pls. 2 yds.

$$\begin{array}{l} \qquad\quad\text{sq. yds.}\\ \qquad 30\frac{1}{4})4809\\ \qquad\;\;\underline{4}\quad\underline{\;\;4\;\;}\\ 121\left\{\begin{array}{l}11\\11\end{array}\right. \begin{array}{l}\underline{19236}\text{ qr. yds.}\\ \underline{1748} + 8\\ \underline{\underline{158}} + 10\end{array} \left.\begin{array}{l}\\ \\ \end{array}\right\} \begin{array}{l}118\text{ qr. yds.}\\ = 29\frac{1}{2}\text{ sq. yds.}\end{array} \end{array}$$

Answer: 158 sq. pls. $29\frac{1}{2}$ sq. yds.

A good proportion of the examples set in Weights and Measures should take the form of little problems, as they are more interesting, and a better means of mental training than plain reduction sums.

PRACTICE.

The only reason for using this rule is to save time and labour. When it does not serve this purpose it is out of place. Long cumbrous Practice sums are generally practical absurdities. Some teachers are inclined to sacrifice practical common sense in working out sums to neatness of appearance. Let the pupils be encouraged to go in search of short methods and to use devices for abbreviating labour. Thus:

(1) To find the cost of 274 articles at $10\frac{1}{2}$d. each.

d. s.
$1\frac{1}{2} = \frac{1}{8}$ of 1

s.		s. d.
274	= cost at	1 0 each.
34 3	= ,, ,,	$1\frac{1}{2}$,,
2,0) 23,9 9	= ,, ,,	$10\frac{1}{2}$,,
£11 19 9	= ,, ,,	$10\frac{1}{2}$,,

(2) To find the cost of 748 articles at £3 19s. 7d. each.

748 at £4 0 0 each	=	£2992 0 0
748 ,, 5 ,,	=	15 11 8
748 ,, 3 19 7 ,,	=	2976 8 4

$$\begin{array}{r} 748\\ \underline{5}\\ 12)\underline{3740}\\ 2,0)\underline{31,1\quad 8}\\ \underline{\underline{15\;\;11\;\;8}} \end{array}$$

(3) To find the cost of 27 cwts., 3 qrs., 13 lbs. at £4 10s. 0d. per cwt.

£	s.	d.	
4	10	0	cost of 1 cwt.
		4	
18	0	0	
		7	
126	0	0	,, ,, 28 cwts.
		$9\frac{1}{2}$	,, ,, 1 lb.
125	19	$2\frac{1}{2}$	cost required.

$$\begin{array}{r} \text{s.}\\ 90\\ \underline{12}\\ 112\Big)\begin{array}{r}1080\\ \underline{1008}\end{array}\Big(\begin{array}{l}\text{d.}\\ 9\frac{1}{2}\end{array}\\ 72 \end{array}$$

RULE OF THREE (UNITY METHOD).

This rule presents no difficulties, but here, as in Practice, there is often a pedantic observance of the general rule, the pupil being required to find the price of *one* when it is wholly unnecessary.

If 3 lbs. cost 5s. 2¾d., what will 9 cost?

In such an example it is not infrequent to see a comparatively long and laborious process, instead of the shorter method which common sense would suggest.

3 lbs. cost 5s. 2¾d.
∴ 9 lbs. ,, 5s. 2¾d. × 3 = 15s. 8¼d.

VULGAR FRACTIONS.

Before beginning a regular course of instruction on Fractions, teach L. C. M. and G. C. M. in connection with small numbers by means of factors. The formal rules for finding L. C. M. and G. C. M. should be postponed as long as possible.

Success in teaching Fractions depends much upon the use of visible illustrations. Variety of illustration is desirable, although as a rule diagrams will serve the purpose. But the diagrams should be *accurately* drawn and divided. Much confusion of thought arises from ill-drawn diagrams inaccurately divided.

First Lessons.

1. Meaning of a Fraction. Sometimes the etymology of a term misleads the teacher. Connecting "fractions" with *fractus* broken, he has been sometimes known to break a thing into any irregular parts, and to speak of each as a fraction. Be careful, then, to divide the unit into a certain number of *equal* parts.

2. Notation of Fractions. Base your teaching on the mode of writing ¼d., ½d., ¾d.

3. Numerator and Denominator. Having shown what the Dr. and Nr. respectively indicates, lead the scholars to see the effect of increasing one or the other of them. Then exercise the class in arranging fractions in the order of magnitude:

   (*a*) $\frac{1}{7}$, $\frac{1}{5}$, $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{12}$; (*b*) $\frac{2}{7}$, $\frac{1}{7}$, $\frac{4}{7}$, $\frac{3}{7}$

   Next compare fractions with unity, leading the scholars to see by inspection when a fraction is equal to, less than, or greater than unity, and write a series of fractions to be arranged accordingly in three columns:

   $\frac{1}{2}$ $\frac{2}{3}$ $\frac{4}{4}$ $\frac{3}{4}$ $\frac{7}{7}$ $\frac{4}{3}$ $\frac{9}{8}$ $\frac{6}{6}$ $\frac{8}{9}$ &c.

4. Fundamental Principle. The value of a fraction is unaltered when the Nr. and Dr. are multiplied or divided by the same number. As the right understanding of the following rules depends on this principle being clearly apprehended, especial pains should be taken to root it firmly. It is well worth a lesson all to itself.

Multiplication of Fractions. First explain the meaning of multiplying one fraction by another; thus, $\frac{3}{4} \times 1 = \frac{3}{4}$; therefore $\frac{3}{4} \times \frac{1}{2}$ must be only half as much, *i.e.*, $\frac{1}{2}$ of $\frac{3}{4}$. Similarly, $\frac{3}{4} \times \frac{1}{3} = \frac{1}{3}$ of $\frac{3}{4}$; $\frac{3}{4} \times \frac{2}{3} = \frac{2}{3}$ of $\frac{3}{4}$, &c.

To discover the rule for multiplying one fraction by another, proceed as follows:

[It is assumed that the class has been previously taught how to multiply and divide fractions by integers.]

Take as an example: Multiply $\frac{3}{4}$ by $\frac{2}{5}$

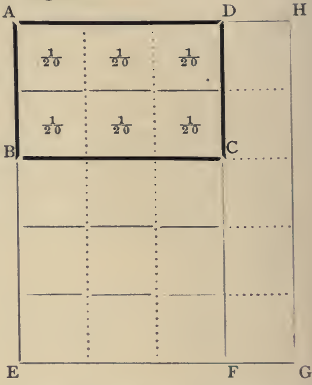
$$\tfrac{3}{4} \times \tfrac{2}{5} = \tfrac{2}{5} \text{ of } \tfrac{3}{4}$$

$$\text{Now } \tfrac{1}{5} \text{ of } \tfrac{3}{4} = \tfrac{3}{4} \div 5 = \frac{3}{4 \times 5} = \tfrac{3}{20}$$

$$\therefore \tfrac{2}{5} \text{ of } \tfrac{3}{4} = \tfrac{3}{20} \times 2 = \frac{3 \times 2}{20} = \tfrac{6}{20}$$

By observing how the Nr. and Dr. of $\frac{6}{20}$ were obtained, the desired rule may be determined.

The accuracy of this result may be shown by a diagram:



Dividing the figure in the way here shown, it will be seen

(1) That it contains 20 equal parts.

(2) That the rect. A E F D = $\frac{3}{4}$ of the whole figure.

(3) That the rect. A B C D = $\frac{2}{5}$ of A E F D

= $\frac{2}{5}$ of $\frac{3}{4}$ of A E G H = $\frac{6}{20}$ of A E G H.

Division of Fractions. First explain the meaning of dividing one fraction by another; thus 3 ÷ 2 means how often is 2 contained in 3, therefore $\frac{3}{4} \div \frac{2}{5}$ means how often is $\frac{2}{5}$ contained in $\frac{3}{4}$.

To discover the rule for dividing one fraction by another proceed as follows, taking as an example:

Divide $\frac{3}{4}$ by $\frac{2}{5}$

(1) $\frac{2}{5} = \frac{1}{5}$ of 2.

(2) $\therefore$ $\frac{2}{5}$ is contained in $\frac{3}{4}$ five times as often as two is contained.

(3) But $\frac{3}{4} \div 2 = \dfrac{3}{4 \times 2} = \frac{3}{8}$

(4) $\therefore \frac{3}{4} \div \frac{2}{5} = \frac{3}{8} \times 5 = \dfrac{3 \times 5}{8} = \frac{15}{8}$

By observing how the Nr. and Dr. of $\frac{15}{8}$ were obtained, the desired rule may be determined.

This may be proved to be correct in these two ways:

(1) $\frac{3}{4} \div \frac{2}{5} = \frac{15}{20} \div \frac{8}{20}$ = 15 twentieths ÷ 8 twentieths = 15 ÷ 8 = $\frac{15}{8}$

(2) £$\frac{3}{4}$ ÷ £$\frac{2}{5}$ means how often is £$\frac{2}{5}$ contained in £$\frac{3}{4}$?

And this is equivalent to saying, how often is 8s. contained in 15s.? And the answer to this is $\frac{15}{8}$.

DECIMAL FRACTIONS.

First Lesson. Its object is to teach (1) Decimal Notation; (2) Conversion of Decimal Fractions into Vulgar Fractions; (3) Definition of a Decimal. The following sketch of the blackboard work, with a few explanatory notes, will sufficiently indicate the course to pursue.

1. NOTATION.

$$1\ 1\ 1\ 1\cdot 1\ 1\ 1$$

$$= 1000 + 100 + 10 + 1 + \tfrac{1}{10} + \tfrac{1}{100} + \tfrac{1}{1000}$$

Thousands, Hundreds, Tens $\boxed{\text{Units}}$ tenths, hundredths, thousandths

$$2456\cdot542$$

$$\begin{array}{lccccccc} & \text{Th} & \text{H} & \text{T} & \text{U} & \text{t} & \text{h} & \text{th} \\ = & 2 & 4 & 5 & 6\cdot & 5 & 4 & 2 \end{array}$$

$$= 2000 + 400 + 50 + 6 + \tfrac{5}{10} + \tfrac{4}{100} + \tfrac{2}{1000}$$

Exercise in naming the value of the figures taken separately:

4·782 17·345 807·807 ·457 ·007

2. CONVERSION.

$$\cdot2 = \frac{2}{10}$$

$$\cdot23 = \frac{2}{10} + \frac{3}{100} = \frac{20+3}{100} = \frac{23}{100}$$

$$\cdot234 = \frac{2}{10} + \frac{3}{100} + \frac{4}{1000} = \frac{200+30+4}{1000} = \frac{234}{1000}$$

that is, $\cdot2 = \frac{2}{10}$; $\cdot23 = \frac{23}{100}$; $\cdot234 = \frac{234}{1000}$

from which the mode of forming the Nr. and Dr. from the decimal figures can be plainly seen.

3. DEFINITION: Facts to be learnt by observation from the above examples:

(1) The decimal figures represent fractions.
(2) The denominator of the corresponding vulgar fraction is some power of ten.
(3) The denominator of a decimal fraction is unexpressed.

The definition may now be elicited.

Multiplication. To enable the scholars to discover the rule, proceed in this way:

$$\begin{aligned}
\cdot 5 \times 7 &= \tfrac{5}{10} \times \tfrac{7}{1} = \tfrac{35}{10} = 3\cdot 5 \\
\cdot 5 \times \cdot 7 &= \tfrac{5}{10} \times \tfrac{7}{10} = \tfrac{35}{100} = \cdot 35 \\
\cdot 54 \times \cdot 7 &= \tfrac{54}{100} \times \tfrac{7}{10} = \tfrac{378}{1000} = \cdot 378 \\
\cdot 54 \times \cdot 07 &= \tfrac{54}{100} \times \tfrac{7}{100} = \tfrac{387}{10000} = \cdot 0378
\end{aligned}$$

Two inferences will be easily drawn from observation of the working and results of these examples: (1) the figures of the product are obtained by multiplying the given numbers; (2) the number of decimal figures in the product equals the number of decimal figures in the two numbers to be multiplied.

Division. The rule can be most easily obtained from Multiplication on the principle that Dividend = Divisor × Quotient. The Dividend being the product of Divisor and Quotient, it follows that the number of decimal figures in the Dividend equals the sum of those in the Divisor and Quotient. Hence, the number of decimal figures in the Quotient may be ascertained by subtracting those in the Divisor from those in the Dividend.

The simplest way of applying the rule is to convert the divisor into a whole number before beginning to divide.

NOTE. All this should be taught, o1 course, by means of examples, and the pupils should be led to make their own inferences.

Recurring Decimals. The teacher will necessarily have to take a more direct share than usual in arriving at the required rules, but he should tell as little as possible, and leave the pupils to form the rules from what they observe in the examples below:

1. Pure Recurring Decimals. Take as examples $\cdot\dot{3}$, $\cdot\dot{3}\dot{0}$, $\cdot\dot{4}0\dot{7}$ and let R represent the given decimal in each case.

(1)

$$\begin{aligned}
R &= \cdot 333\text{, \&c.} \\
10\,R &= 3\cdot 33\text{, \&c.} \\
9\,R &= 3 \\
R &= \frac{3}{9}
\end{aligned}$$

(2)

$$\begin{aligned}
R &= \cdot 303030\text{, \&c.} \\
100\,R &= 30\cdot 3030\text{, \&c.} \\
99\,R &= 30 \\
R &= \frac{30}{99}
\end{aligned}$$

(3)

$$\begin{aligned}
R &= \cdot 407407\text{, \&c.} \\
1000\,R &= 407\cdot 407\text{, \&c.} \\
999\,R &= \frac{407}{999}
\end{aligned}$$

(4)

Collecting the results we have:

(1) $\cdot\dot{3} = \dfrac{3}{9}$

(2) $\cdot\dot{3}\dot{0} = \dfrac{30}{99}$

(3) $\cdot\dot{4}0\dot{7} = \dfrac{407}{999}$

Hence deduce the rule.

2. Mixed Recurring Decimals. Take as Examples $.25\dot{4}$, $.4\dot{3}\dot{9}$, $.37\dot{4}2\dot{8}$.

(1)

$$\begin{aligned} R &= \cdot25444, \&c. \\ 1000\,R &= 254\cdot44, \&c. \\ 100\,R &= 25\cdot44, \&c. \\ 900\,R &= 254-25 \\ R &= \frac{254-25}{900}. \end{aligned}$$

(2)

$$\begin{aligned} R &= \cdot43939, \&c. \\ 1000\,R &= 439\cdot39, \&c. \\ 10\,R &= 4\cdot39, \&c. \\ 990\,R &= 439-4 \\ R &= \frac{439-4}{990}. \end{aligned}$$

(3)

$$\begin{aligned} R &= \cdot37428428, \&c. \\ 100000\,R &= 37428\cdot428, \&c. \\ 100\,R &= 37\cdot428, \&c. \\ 99900\,R &= 37428-37 \\ R &= \frac{37428-37}{99900}. \end{aligned}$$

Collecting the results we have

$$(1)\quad \cdot25\dot{4} = \frac{254-25}{900}$$

$$(2)\quad \cdot4\dot{3}\dot{9} = \frac{439-4}{990}.$$

$$(3)\quad \cdot37\dot{4}2\dot{8} = \frac{37428-37}{99900}.$$

Hence deduce the rule.

SIMPLE PROPORTION.

Proportion being the equality of ratios, the teacher must first give a clear idea of ratio. The following will indicate the course to be followed:

Meaning of Ratio.

1. We may compare 6 with 2 in two ways, by saying 6 is 4 more than 2, or 6 is three times 2, that is, by subtraction or division.

2. Taking the second way, give the class examples to be compared as 8 to 2, 4 to 12, 3 to 9, 9 to 3, and dividing in each case the first by the second.

3. Then give the term *ratio*, signifying the comparison between two quantities made by dividing the first by the second.

4. Next show the usual way of writing a ratio, and exercise the class in finding the value of ratios, as

$$3 : 4 = \tfrac{3}{4};\quad 4 : 9 = \tfrac{4}{9};\quad 9 : 3 = \tfrac{9}{3}$$

5. Then take concrete quantities and show the necessity of bringing the quantities compared to the same denomination, as the ratio of a foot to a yard, of a crown to a florin, &c.

Meaning of Proportion.

1. Compare a crown with a pound and show that the ratio may be expressed in two ways:

cr. crs. s. s.
1 : 4 or 5 : 20.

Since these two ratios must be equal we can say

1 is to 4 as 5 is to 20,
or, 1 : 4 :: 5 : 20.

2. When we have four quantities so arranged that the ratio of the first to the second equals the ratio of the third to the fourth, the four quantities are said to be in proportion.

3. Exercise the class in forming equal ratios with easy numbers, *e.g.*, $2 : 4$ as the given ratio $2 : 4 = 3 : 6 = 4 : 8 = 6 : 12$, &c.

4. Then from each pair of ratios form a proportion :

$$2 : 4 :: 3 : 6,\ 4 : 8 :: 6 : 12, \text{ \&c.}$$

5. Then introduce the technical terms; "terms," "means," and "extremes."

The Rule.

Write with class co-operating three sets of terms in proportion :

$$2 : 4 :: 4 : 8.$$
$$3 : 9 :: 4 : 12.$$
$$15 : 5 :: 9 : 3.$$

2. Find the value of each ratio in the usual way.

Multiplying crosswise we have :

$$2 \times 8 = 4 \times 4\ ;\ 3 \times 12 = 4 \times 9\ ;\ 15 \times 3 = 9 \times 5.$$

3. By careful inspection the scholars may be led to infer that *the product of the extremes equals the product of the means.*

4. Given 3 terms to find the 4th.

Given $2 : 3 :: 4 : x$ to find x.

$$2x = 4 \times 3$$
$$x = \frac{4 \times 3}{2} = 6.$$

Hence the rule, *multiply the second and third terms together and divide by the first.*

FAULTS TO BE AVOIDED.

MISTAKES IN GOVERNING.

1. Failing to keep the temper and treatment even and uniform, the teacher being sometimes lenient and sometimes severe. This kind of discipline is unjust as well as unwise; for undue leniency tempts the children to offend, and the misconduct thus induced often leads a weak teacher to inflict excessive punishment. Leniency is ever the parent of severity.

2. Giving an order without seeing it carried out, or a command without enforcing it, the teacher thus playing fast and loose with his authority. No bank could stand a single day that was not ready to cash its own notes on demand. The teacher who does not honour his own commands is foolishly throwing away his credit and tampering with his own authority. Even men and women with strong wills need to guard against indolence in enforcing compliance to rules and commands. Let children always know what to expect. The fear of a small punishment that is certain is more effectual than that of a severe punishment that is uncertain.

3. Another mistake is to make a learner feel silly or look foolish. To ridicule a feeble attempt may prevent a stronger effort. A sarcastic tongue seals a child's heart and leaves a sting of resentment. To lose patience with a dull child is a mark of unfitness for the work of a teacher; to pour ridicule upon a child for stupidity is to label oneself as senseless. Real stupidity calls for pity and patience; as well chide one child for being blind as another for being stupid.

4. Sometimes a teacher is foolish enough to run counter to a child's nature and to expect the preternatural. Children being naturally restless, we should make allowance for their not keeping as still and quiet as we could wish. Better to find a vent for their exuberant spirits than, by constantly repressing them, to render the children dull and listless. We do not want absolute stillness in a schoolroom, but the subdued, healthy hum of industry; walking on tiptoe and speaking in a whisper are more fit for the sickroom than the schoolroom.

5. The path of duty is sometimes made perplexing by a multitude of rules. The prohibitive word "Don't" figures far too largely in the management of children. Let our rules be few and comprehensive, and let us try to substitute *do* for *don't*, turning the children's energies into a useful channel instead of trying to repress them.

6. There is in some schools too much scolding. If a child has neglected some duty, or carelessly performed it, let him be quietly ordered what to do. Doing is the right remedy for not doing. Habitual scolding is either a vent for ill-temper or a mistaken means of discipline. In either case it mars the happiness of a school. Indiscriminate praise is also to be avoided. Both praise and blame should be administered sparingly and with discrimination.

7. Closely allied to the habit of scolding is the practice of speaking of a child's faults in unmeasured terms, magnifying his offences, and censuring mere trifles inordinately.

But even this mistake is not so serious in a teacher as concentrating his spleen upon the devoted heads of one or two scholars whom he regards as "black sheep." If a child feels that you have once for all formed a bad opinion of him, he will be sure to do his utmost to deserve the ill name you have given him.

8. Then there are several mistakes connected with the act of punishing children, such as—

(*a*) Punishing *en masse*, when the real culprit cannot be discovered. In such a case it is better to postpone the enquiry until the close of school. The effect is to punish the whole class *indirectly*, and to bring home to them their share of responsibility for each other's conduct, without making them feel unjustly treated.

(*b*) "Keeping in," in playtime, instead of at the close of school. The usual break of ten or fifteen minutes should be utilised for fresh air, both for the schoolroom and the scholars, all of whom should—in fair weather—be sent to the playground while the windows are thrown open.

(*c*) Making what is called "an example" of a child. This generally means giving an extra punishment to a child who is "found out" as a set-off for the many who have escaped detection, or giving a severer punishment than the child deserves with the view of inspiring the rest with fear.

(*d*) Having recourse to illegitimate modes of punishing when not authorised to administer corporal punishment. If not entitled to use the cane, disdain to employ any unfair means of punishing, such as rapping the knuckles, and in particular the dangerous practice of boxing the ears. By these surreptitious practices you lose the respect of your pupils, you occupy a false position, and expose yourself to insolent remarks.

(*e*) Allowing a child when brought out of class for disorder, to lounge about behind the teacher's back, and in some cases to make himself comfortable near the fire. Of course the child should be placed within sight of the teacher, and made to stand upright and to attend to the lesson.

(*f*) Sending to the Head Teacher too many for punishment. When this is done only a nominal punishment is given, and the children return to their places with ill-disguised satisfaction. Ineffectual punishment does positive harm. To avoid this harmful proceeding the young teacher is strongly advised to keep a little note book in which to enter the names of offenders in the course of a lesson, making a cross for each additional offence, with the understanding that the greatest offender will be brought to the notice of the Head Teacher at the close of the lesson.

MISTAKES IN TEACHING.

Chief Faults in "Criticism Lessons."

1. The commonest fault is attempting too much in the time at disposal. Every student is apprehensive that he will "run dry" too soon, although he is well aware that the common experience of his fellow-students proves that his fear is groundless. It is better to take one topic and work it out thoroughly than to treat three or four inadequately. Moreover, the work of a lesson depends greatly on the amount of work the pupils are led to do for themselves, and that is always a slow process. Therefore, take a small and well-defined field to work upon. Should you prefer one particular part of a subject, give beforehand a preliminary lesson leading up to it.

[Notes of a Lesson might be written on the whole subject, the part to be taught being clearly indicated.]

2. Notwithstanding the short time allowed, there are some students who seem to take for their motto "Time, no object," spending an inordinate amount of time on some fanciful introduction, or in playing about the fringe of the subject. Others seem often to be "marking time" instead of making each step a step forward. Others, again, make unnecessary digressions, "flying off at a tangent instead of circling round the central point." Endeavour, then, to get to the core of the lesson as soon as possible, for much time is required to teach a little really well.

3. The want of proportion and balance is also a common failing; the student spending much time on the less important matters, which may happen to come first, and hurrying over, with breathless impatience, the more important matters that happen to come later. A good lesson, like a good picture, is arranged on the principles of perspective, the questions of real moment being brought into the foreground and pressed on the attention. Fix, then, the attention on a few salient facts and ideas, press them home with some emphasis, resolved that the pupils shall learn them, whatever happens. And for this purpose stop at convenient points in the lesson and summarise what you have taught, writing a few concise notes on the board. Time should also be left, near the close of the lesson, for a final examination to impress and fix all the main points.

4. One of the common pitfalls in teaching students sometimes gratuitously dig for themselves by introducing *needless* definitions, which are ticklish things in the hands of the most skilful, and in raw hands invariably crude and inaccurate, whilst to children good and bad alike are utterly distasteful. This practice seems to arise from the student attaching undue importance to a form of words which can be learnt off and reproduced. Definitions, of course, are absolutely necessary at times, but avoid them when needless.

5. Another mistake, shared by teachers generally, is in talking too much. There should be pauses in teaching as there are rests in music. Time should be given for quiet thought, for thinking out the answer to a thoughtful question, for working out some result. Students in teaching before H.M. Inspector are very apt, from being excited, to talk incessantly. "Many teachers," says Mr. Sharpe, in his last report, "seem to think they are not doing their duty unless they are talking perpetually . . . . . The teacher, aiming at effect, gets a habit of keeping up a continual 'patter' under all circumstances."

6. The other faults most noticeable in "criticism lessons" are connected with the use of the blackboard, the supply of specimens and objects and the mode of exhibiting them, and the manipulation of the apparatus in performing experiments. One has often seen a few blackboard notes jotted down hurriedly, at inopportune times, for form's sake, objects passed round rapidly with farcical effect, and experiments attempted that fail to "come off." On the other hand, one has often had occasion to admire the aplomb of the student under a sense of failure, his cheerfulness under depressing circumstances, and his hopeful perseverance under unexpected difficulties, thus giving evidence of the possession of moral qualities far surpassing in value the technical skill which he has still to acquire.

Common Faults of Method. In addition to the prevalent faults of students above noted, there are many other mistakes commonly made by younger teachers. Let me mention the principal ones:—

1. IN ORAL TEACHING.

(*a*) It is a mistake to suppose that a lesson to little children requires no preparation. The greatest skill is required to make the instruction clear and interesting. Much thought is needed to plan out and illustrate the simplest lesson in the most effective way. It is also a mistake to suppose that you can give a good oral lesson to the older scholars on facts with which you were once familiar without spending time beforehand in reviving them in your mind and arranging them in the best way for teaching. Freshness, remember, is the breath of life in teaching.

(*b*) It is a great mistake to depend upon small text-books for your information, and an unpardonable mistake to rely upon some other person's notes of lessons. Any teacher, who would excel, must go in search of material in interesting books on the subject, and that material he must organise, or arrange and mould, by setting his own wits to work.

(*c*) There are at least these common errors in Questioning:

- (1) Looking at the child who is to answer whilst putting the question instead of making every child feel liable to be called upon for a reply.
- (2) Asking a series of questions each requiring a mere word for an answer instead of training the younger children to reply in complete sentences or the older scholars to give comparatively long answers.
- (3) Framing indefinite questions or such as do not distinctly convey your meaning. We should not be satisfied with the children catching our meaning, but endeavour to make it plain by recasting the question.
- (4) Putting questions that demand no thought, such, for instance, as can be answered by "Yes" or "No."

(*d*) The following are no less common errors in dealing with Answers:

- (1) Accepting fragmentary answers, or the mere scraps of knowledge, and saving the pupil the effort to express his meaning fully by taking the task on yourself—satisfied apparently with the indication he has given of possessing the right idea.
- (2) Rejecting an answer that does not exactly suit your purpose although your question fairly admits of it, the teacher often impatiently saying, "Yes, yes; but that is not what I want." This leads the children to guess at your meaning. You should have quietly accepted the proffered answer, and asked another question to educe what you want.
- (3) Or, rejecting an answer substantially right because it does not coincide in form with that in the teacher's mind. The right course in such a case is to accept the answer and reshape the question. We should not, in any case, be too ready to reject an imperfect answer. "I am always especially pleased," says one of H. M. Inspectors, "when the children having given partially right answers, are led on to discover the truth for themselves."
- (4) Being satisfied with receiving answers from the more willing or more advanced members of the class. The proof of success is in the right answering of the dull and backward.
- (5) Repeating answers habitually, as if to gain time for framing the next question. Answers sometimes require to be emphasized by the teacher, but when repeated automatically, time and words are wasted.

(*e*) Among the remaining mistakes most worthy of mention are the following:

- (1) Correcting errors without trying to eradicate them, or without trying to impress the truth upon the whole class, forgetting that the error of one is probably shared in by many. Time cannot be more fruitfully spent than in uprooting error and driving home the corresponding truth.
- (2) Introducing a new technical term before imparting the idea it represents, making the term instead of the thing the basis of the teaching, or, in some cases, making no use of the term after introducing it.
- (3) Spoiling the effect of a good illustration by not dwelling upon it sufficiently long for the children to appropriate its teaching. It is not sufficient, for example, to mention an example of some general principle without showing its bearing upon the question, or to exhibit a picture in illustration of some description without drawing attention to its details.

2. IN TEACHING READING. Common mistakes in teaching reading may be thought too numerous to mention, but there are three broad errors which seem worthy of especial mention:
   - (*a*) Misspending time in teaching spelling instead of reading, and in a fruitless attempt to get a class of rough lads with a strong provincial accent to pronounce their words in a way wholly foreign to their ears, forgetting that the main object of reading lessons is to enable the children, as soon as feasible, to gather instruction for themselves from reading.
   - (*b*) Marring the effect of the reading by continual interruptions, in correcting blunders, and asking questions inopportunely. The class should first read through the lesson continuously, to get a fair grasp of its contents, before being questioned on the language or subject-matter. And instead of the reader being repeatedly pulled up for some trivial fault, corrections should, as a rule, be deferred till he has finished his portion.
   - (*c*) Giving no opportunity for silent reading—to be followed by a thorough examination—from not considering "that the best intellectual result of school life is the formation of the habit of trying to learn things for one's self."

3. IN DICTATION LESSONS. There are three serious errors which greatly impair the usefulness of the Dictation exercise:
   - (*a*) Turning the exercise into a test of spelling rather than a means of teaching it by omitting to give the scholars an opportunity of making preparation.
   - (*b*) Dictating more than can be properly corrected—that is, errors marked and the misspelt words rewritten correctly—in the time of the lesson, thus helping to fix on the memory the erroneous spelling of the words uncorrected.
   - (*c*) Setting the class to write the misspelt words five or six times without supplying them with the means of doing so correctly, either by giving out the books from which the passage was taken, or by writing the hard words on the board. No surer way could be taken of firmly rooting many an error.

4. IN TEACHING ARITHMETIC. The common practice seems chiefly at fault in these respects:
   - (*a*) There are too few exercises in the use of short methods, and with speed as the main object.
   - (*b*) The scholars are too seldom required to work the same sum by two or more methods—a practice that would enable the learners to test the accuracy of their working, and to ascertain, by experience, the best method to adopt.
   - (*c*) There is too little collective teaching and practice. Whilst one section of a large class is engaged in working from books or cards, another section should be taken in hand by the teacher and set to work upon the same sum, first on slate or paper, and afterwards, if necessary, on the blackboard.
   - (*d*) But the most serious blot is in the mode of exercising a class in mental arithmetic—
     - (1) There is too often an entire absence of aim and method, the questions being neither graduated nor connected, and leading nowhere.
     - (2) And when a little problem is proposed, the children are seldom left in peace to solve it; but after they have begun upon it in their minds, they are interrupted by the teacher foolishly repeating the question or making some untimely remark.

5. IN TEACHING GRAMMAR.
   - (*a*) Many a good lesson in teaching a definition or rule has been spoilt by the weak exercises that follow. The exercises are really the most important part of the lesson, serving, when good, to test the children's apprehension of the lesson, and to give them a practical grasp of the subject.

(*b*) There is too much mechanical parsing. In the upper classes only selected words should be parsed, and all useless terms should be omitted, such as, regular or irregular, weak or strong, as applied to verbs.

(*c*) In analysing too little attention is given to the division of an extended sentence into its component clauses and the relation between them. This is the chief thing to be attended to as soon as a class can analyse simple sentences. There is then no need of taking up time and space in analysing compound and complex sentences in detail.

INSTRUCTION OF INFANTS.

(*Issued by Education Department to H. M. Inspectors, 1893*).

Two leading principles should be regarded as a sound basis for the education of early childhood:

(1) The recognition of the child's spontaneous activity, and the stimulation of this activity in certain well-defined directions by the teachers.

(2) The harmonious and complete development of the whole of a child's faculties. The teacher should pay especial regard to the love of movement, which can alone secure healthy physical conditions; to the observant use of the organs of sense, especially those of sight and touch; and to that eager desire of questioning which intelligent children exhibit. All these should be encouraged under due limitations, and should be developed simultaneously, so that each stage of development may be complete in itself.

It has been strongly urged that sufficient attention has not been paid in the past to these principles; indeed, it is often found that the Kindergarten Occupations are treated as mere toys, or amusing pastimes, because they are attractive for children, and the intellectual character of the "Gifts of Froebel" is disregarded, whereas the main object of these lessons is to stimulate intelligent individual effort.

You should direct the attention of teachers to the chief consideration which underlies true methods of infant teaching, viz., the association of one lesson with another through some one leading idea or ideas. The reading lessons, occupations, and object lessons may all be usefully combined for one purpose, *e.g.*, if the teacher wishes to impress on her class some knowledge of a domestic animal, she may usefully combine the object lesson for general study of its structure; the reading lesson for a knowledge of its habits and character; some occupation, such as pricking the outline, to impress an exact knowledge of its form; a song or simple story bearing on its association with human life; so that familiarity with animals, especially with domestic animals, and a kind treatment of them may be fostered.

On the other hand, you should caution teachers against the mere repetition of the same exercises and lessons; the progressive character of the whole scheme of instruction should be constantly kept in view; and each exercise should lead up to something beyond itself.

Pictures and flowers have been wisely introduced of late in greater abundance into infant schools and have added much to their cheerfulness and attractiveness. They should be frequently taken down into the class, and made the subject of conversation. It is not enough that the children should be taught to observe these things and to answer questions upon them. They should be encouraged in every way to give expression in their own words to what they know, what they want to know, and what they think.

It will be found that the Elementary Subjects when taught on right methods can be treated with greater variety; Reading becomes a Kindergarten lesson through pictures and word building; Writing becomes a variety of Kindergarten drawing; elementary exercises in Number are associated with many of the Kindergarten occupations.

It is the experience of many good teachers that by the adoption of such methods it is found to be unnecessary before the sixth year is passed to employ books for Reading, except occasionally for a change of occupation, or perform any exercise in Writing except the elements of letters, or to do any formal Arithmetic work on slates.

It may reasonably be hoped that the observance of these suggestions will materially improve the work of the younger children in infant schools and classes, by relieving the teacher from that useless sub-division in the elementary subjects, which has been hitherto generally employed, and by rendering the instruction less formal, but more varied and attractive.

VARIED OCCUPATIONS (INFANTS).

The following list of "varied occupations" has been issued by the Education Department as a guide to Infant School Teachers:

FOR CHILDREN BETWEEN THREE AND FIVE.

1. Games with music.
2. Games without music (guessing games, etc.).
3. Recitations—nursery rhymes, etc.
4. Picture Lessons (learning to answer in complete sentences as to what they can see in a picture).
5. Paper-folding.
6. Mosaic with coloured tablets.
7. Drawing.
8. Matching colours (picking out the same shades of wool from a heap of remnants).
9. Plaiting paper.
10. Working patterns with needle and worsted.
11. Threading beads in twos, threes, etc.
12. Arranging shells in twos, threes, etc.
13. Arranging "pictures of number" with cubes.
14. Word building.

FOR CHILDREN BETWEEN FIVE AND SEVEN.

1. Games with music.
2. Games without music (guessing, taking messages, etc.).
3. Picture Lessons.
4. Object Lessons.
5. Story Lessons, *e.g.*, Stories from History; Grimm's Household Tales.
6. Recitations.
7. Paper-folding.
8. Mosaic with coloured paper; use of gum.
9. Drawing. Brush drawing.
10. Plaiting paper.
11. Ruling simple geometrical forms.
12. Measuring length. Estimating length.
13. Weighing. Estimating weight.
14. Setting a table (carrying a glass of water without spilling it; moving cups without breaking them).
15. Modelling in clay.
16. Basket work.
17. Cutting out patterns with scissors.
18. Word building.
19. Number pictures, with cubes, beads, etc.

FROEBEL'S "GIFTS."

These were the models or objects he employed for training the senses of children :

Gift I. Six soft woollen balls of different colours—red, orange, yellow, green, blue, and violet. Aim—to teach colours and direction.

Gift II. A sphere, a cylinder, and a cube ; all made of wood. Aim—to teach form, to lead children to compare and observe.

Gift III. A cube consisting of eight smaller cubes, and generally called the *First Building Box*. Aim—to teach number, to exercise in forming simple symmetrical structures.

Gift IV. A cube divided into eight oblong bricks. Length twice the breadth, breadth twice the thickness. It forms the *Second Building Box*. Aim—to teach number and to develop constructive power.

Gift V. A large cube divided into 21 whole, 6 half, and 12 quarter cubes. This is the *Third Building Box*. Aim—to develop constructive power by supplying material for more complex structures.

Gift VI. A large cube divided into 27 smaller cubes, nine of them being variously sub-divided, making altogether 36 pieces. This is the *Fourth Building Box*, and the Aim is the same as before.

Gift VII. Five boxes of tablets made of wood and painted in different colours. The tablets consist of squares, isosceles, equilateral and other triangles. Aim—to give full scope to the children's power of designing symmetrical figures and of arranging the colours tastefully.

SUITABLE OCCUPATIONS (Lower Standards).

(*Issued by Education Department to H. M. Inspectors, 1896.*)

It appears that the various manual occupations which have hitherto been introduced for the lower Standards because of their suitability, resolve themselves into exercises in the studies of (i.) form, (ii.) colour, (iii.) measurement, which should be, where possible, connected with other subjects of instruction.

(*a*) For acquiring a knowledge of form, the most effective occupation is clay modelling. It demands accurate observation of the object which is chosen as a model, and the accuracy of the observation will largely depend upon previous instruction as to the build or growth of the object in its natural state. Sometimes a lesson on modelling has followed one on natural history or science ; sometimes the children, after an object lesson upon the formation of a fruit or the germination of a seed, have modelled the object, thus at once testing the correctness of their impression and driving it home. Clay modelling has been used to illustrate the geography lessons ; for example, the children construct a model of the river basin in which they live ; and again, illustration has been found for the history lesson in constructing a model of some neighbouring encampment, whether square or circular, Roman or British. As a knowledge of form depends upon a close observation of light and shade, a lesson in modelling greatly furthers instruction in drawing. Clay modelling, however, lacks the charm of colour.

(*b*) Colour may be studied in the following ways. When care is taken to provide a variety of tasteful shades of coloured paper, it is possible to combine the drawing, cutting out, and mounting of a number of good designs, many of which may be in respect both of pattern and arrangement of colour, the original work of the children themselves. The drawing may be done partly by aid of rulers and templates and partly freehand. The use of templates makes it possible to stamp on the mind certain beautiful curves at an earlier age than children can draw them freehand. The advantages of it are that it promotes accuracy and good taste in colour and design, and also a sense of harmony and proportion. The defect of it is that the manipulation is somewhat monotonous, and that it does not lead to much increase of knowledge of varied objects.

(*c*) Brushwork demands a clear perception of form and some knowledge of natural objects, and cultivates delicacy of touch, but it does not train the student to great accuracy, or cultivate the sense of colour. Children, however, can express their impression of a flower, as for instance, a bluebell and its leaves, much more easily by the brush only than by the pencil, and if their observation has been very inexact, the error becomes obvious when they try to draw their impression.

(*d*) As an exercise in accurate measurement, cartridge paper or cardboard modelling leaves little to be desired. This work is an excellent training in exact measurement and in cutting true to measure, and it furnishes an elementary notion of construction. The manipulation, however, in this exercise also, is somewhat monotonous. This kind of work lends itself readily to the illustration of instruction in simple geometry. The beginner may learn to cut out in cardboard (or more readily still in stout drawing paper) simple plain geometrical figures, and after a time he may proceed to simple geometrical solids. The cube, the cone, the cylinder, the wedge, the prism, and the pyramid can all be drawn, cut out, and put together without much difficulty. The manufacture of various useful articles, such as blotting books, frames, trays, and the like, can be combined with the formation of geometrical figures.

(*e*) As no one of the branches of manual occupation is complete when taken by itself, the most satisfactory results will follow where it is found possible to make them supplement each other.

(*f*) Very great care is necessary in leading the pupils to acquire correct method in handling brushes, tools, and all the implements required. Another point which demands attention is that of the general posture of children during their lessons. Where much stooping is necessary, the work should be occasionally interrupted and a short extension drill given. Unhealthy and cramped postures should be avoided. Whilst fairly accurate work should be aimed at, you must beware of expecting very fine work requiring minute finish, or any work which is likely to strain the eyesight of young children.

WORD BUILDING AND SPELLING.

(*Issued by Education Department to H. M. Inspectors, 1896.*)

Word Building is a system of teaching by means of a course of progressive lessons, leading up from the formation of simple sounds to the composition of words by means of affixes and suffixes, and may be considered to consist of two distinct divisions:

(1) The building up of a single syllable, by assigning to it that combination of letters which usage has determined to be the conventional representation of its sound, which is the true inductive method of teaching spelling.

(2) The combination of one or more of such syllables, of which a root word (*i.e.*, a word which cannot be reduced to a simpler form) is composed, with suffixes and affixes, such as the formation of nouns from adjectives, as *heavy*, *heaviness*; thus giving a training in the use of language.

The former process by itself would lead to correct spelling in the languages of countries which possess comparatively few cases of exceptional spelling. But the imperfections and inconsistencies of our English alphabet in representing many of the commonest sounds are so numerous that it might almost be said that in English we virtually possess two separate languages, a spoken language and a written language, the one appealing to the ear, the other to the eye.

It is not possible consequently to separate the spelling of anomalous words entirely from Word Building, because a purely phonetic method of spelling English words cannot be used; therefore, after dealing with a group of words connected by a common spelling of the same sound, and so reducing a considerable number of English words to certain visible and intelligible principles, the teaching should embrace the spelling of some few exceptional words of common use, which convey the same sound by a different combination of letters, though such instruction lies quite outside the progressive course of lessons on Word Building. It should be clearly understood that such lessons are subordinate to the Word Building, and should not be considered as a real test of a good series of Word Building lessons. In selecting the exceptions to be taught it would be wise to select such anomalous words as are in common use.

A clear distinction may be helpfully drawn between the methods of teaching groups of regular words formed by Word Building and exceptions to the rules. In teaching, the former should be spoken before they are written on the blackboard, to connect more firmly the sound with its ordinary combination of letters; the latter should be written on the blackboard before they are spoken, so that the teacher may be able to disconnect the same combination from its ordinary pronunciation.

The Word Building lessons in infant schools may be usefully restricted to the simple phonetic teaching of the more common of the different sounds represented by the letters of the alphabet. It should be possible in infant schools to teach simple combinations which might include, for example, all the simpler closed syllables; while relegating to the schools for older scholars such difficult varieties of sound as are conveyed, for instance, by the three sounds of the combination "ch" in chin, charade, and chasm. But the chief part of the Word Building will, in the upper schools, consist of the combination of root words with suffixes and affixes, which might be progressive in difficulty, rising from such simple forms as the more common terminations of nouns and adjectives and the suffixes denoting gender, to the formation of adverbs from adjectives or prepositions, or other difficult combinations. There is no better exercise of the inductive method of reasoning, nor one more intelligible and interesting to young children, than verbal analysis, *i.e.*, the exact investigation of the several parts of familiar words. The addition, for example, of the suffixes *en*, *er*, *est*, *ly*, *ish*, and *ness* to the word sweet, and the use of words so found in short sentences, will lead the scholars by simple induction from these and other similar words to determine for themselves the exact meaning of each suffix.

QUESTIONS
SET AT THE QUEEN SCHOLARSHIP EXAMINATIONS.

DISCIPLINE.

1. Why should young teachers be restricted from the use of corporal punishment (*a*) for the sake of their scholars (*b*) for their own sake?

2. If you found your class getting listless and sleepy, what causes would you suppose to be at work and what would be your remedies?

3. How were you accustomed to deal with dull, lazy, or obstinate children, and what special means did you adopt for securing attention?

4. How should restlessness in children be turned to good account?

5. How far is it in the power of a teacher, by other means than school lessons, to improve the habits, manners, and character of the children?

6. Point out some ways in which school discipline may be useful in producing habits of ready obedience, and name some characteristic features of good discipline.

7. Describe some of the ways in which a teacher loses the attention of his class.

8. Mention any difficulties you may have met with in the effort to control your pupils, and state how those difficulties were overcome.

GENERAL TEACHING.

1. It is said that "in teaching we should proceed from the known to the unknown." Explain what this means, and show how it is applicable to a lesson on either geography or grammar.

2. It is often found that the answering in "class subjects" is confined to a few of the children. What are the causes of this, and how would you remedy it?

3. What is the best method of examining a class? What kinds of questioning should be avoided?

4. What is meant by a collective lesson? How would you question the children so as to discover how much each has learned from it?

5. Explain the difference in the nature and purpose of questions employed at the beginning, during the course, and at the conclusion of an oral lesson.

For what purpose is the elliptic method of questioning valuable?

6. Give some reasons why children should be trained to answer in complete sentences.

7. What sort of a sketch should appear on the blackboard at the end of a collective lesson on *iron*; and what is the best use to make of such a sketch when written?

8. Explain the meaning of education, and show the difference between education and instruction.

INFANT EDUCATION.

1. What are the leading characteristics of child-life which underlie Froebel's system of teaching infants?

2. What is the educational value of working or pricking out lines of animals or other objects?

3. How may varied occupations be made to facilitate instruction in (*a*) arithmetic; (*b*) and other subjects?

4. Make out a list of six suitable occupations and games for babies, and describe the manner in which you would conduct them.

5. Explain the terms *Kindergarten* and *Froebel's gifts*, and state fully the educational use of the second and fourth gifts.

6. Give examples of Kindergarten exercises that may be used to stimulate invention and imitation in young children.

READING.

1. Give some rules which you intend to follow for securing (1) distinct articulation; (2) intelligent expression in reading.

2. What are the commonest faults which you have found in the reading of children? How would you correct them?

3. In teaching reading to very young children some teachers begin with the alphabet; others teach little words first, and afterwards call attention to the names of the letters. Which of these methods do you prefer and why?

4. What are the advantages and disadvantages of simultaneous reading, and when and how should the practice be adopted?

5. What are the chief points to be kept in view in teaching reading? Name the advantages, if any, of exercises in silent reading in school.

6. By what means have you been accustomed, when teaching children to read, to promote individual effort in dealing with new or forgotten words?

WRITING AND SPELLING.

1. What are the advantages of teaching large hand before small; and how far is it desirable to continue large-hand practice in the upper classes?

2. Say what use you think it right to make of 'tracing' in teaching writing. Write in large hand the five capital letters; B, K, Q, M and W; and point out the commonest faults made by learners in forming them.

3. Classify the letters of the alphabet according to their elements, showing the order in which you would teach them.

4. Which do you prefer in teaching writing—engraved copies, or copies set by the teacher on a blackboard? Give reasons for your preference.

5. Describe the proper position of a child when writing, and show the ill effects of a bad position.

6. State the various methods used to teach spelling in your school. Did you rely chiefly on the eye or on the ear in teaching spelling?

7. How was the dictation exercise usually corrected in your class? What expedients did you adopt to prevent copying?

8. Distinguish the uses of dictation and transcription lessons for children lately transferred from an infant school.

9. What rules have you learned to observe in giving out dictation?

ARITHMETIC.

1. Give some hints for making oral exercises in arithmetic interesting.

2. What objects should be kept in view in the teaching of mental arithmetic? Say how these objects may be best attained, and give some examples of good oral exercises suitable to the second standard.

3. How can mental addition and subtraction of money be used to illustrate the first steps in simple addition and subtraction? What other illustrations would you employ?

4. Write out brief heads of a first lesson in simple subtraction, with a series of progressive examples.

5. Show how you would explain to a class of beginners the *reason* of any one of the following processes: (*a*) Ascending reduction, (*b*) Subtraction of fractions, (*c*) Cancelling.

6. Name some of the most effective visible and tangible illustrations for use in teaching Notation.

7. Explain any way you know of making clear to the eye the process called multiplying $\frac{3}{8}$ by $\frac{1}{4}$.

8. What preparation have you been taught to use before letting children attempt to work sums in weights and measures?

9. If placed in charge of a class accustomed to count their fingers in adding, how would you proceed to get rid of the habit?

GRAMMAR AND COMPOSITION.

1. Say in what order you would teach the parts of speech, and give your reasons.

2. At what stage in a lesson would you give a definition? Show how you would lead up to and work out the definition of an adjective to Standard III.

3. If you were at liberty to choose between "English" and "Geography" as a class-subject, which would you prefer, and why would you prefer it?

4. Show by two or three illustrative sentences how you would help scholars to determine the case of relative pronouns.

5. Give examples of simple sentences that may be formed by Third Standard children to illustrate the position of the verb and the adjective in a sentence.

6. It is stated in the *Instructions to H. M. Inspectors*, that "the teaching of English should be supplemented by exercises in Composition." How may this be best done in the Third Standard?

7. Show that Grammar and Composition may be taught simultaneously from the first.

8. What are the chief points to be attended to in correcting the Composition—*e.g.*, a letter—of an older class?

GEOGRAPHY AND HISTORY.

1. In giving a lesson on a river, which is the better plan, to speak first of a particular river which the children have seen, or to start with a definition and a general description? Give reasons for your opinion.

2. Make an outline map of the parish or district in which your school is situated; and explain how such a map would be useful in giving an elementary lesson on Geography.

3. State the requirements of the Code in the Geography of the Fourth and Fifth Standards, and say how Geography may be made useful and interesting to children.

4. Describe the sort of apparatus and visible illustration which are likely to prove most helpful to a teacher in giving the earliest lessons in Geography.

5. Show that a map differs from a picture, and explain how you would supply its deficiences to a class beginning to learn Geography.

6. In teaching History, say what use, if any, you would make of chronological tables. Is it better to learn the date before or after the pupil knows something of an event and becomes interested in it? Give your reasons.

7. In giving a lesson on the Duke of Wellington, show what use you would make of comparison and contrast with any other character in History.

8. It is sometimes said that one of the best ways of teaching History is by means of biography. Explain this. Name five or six persons whose biography would throw great light on the history of the eighteenth century, and give a slight sketch of *one* such biography.

9. Select points in the character of Lady Jane Grey, *or* Robert Bruce, *or* Nelson, that would be especially attractive to children, and write out some anecdote by which you would illustrate each point.

OBJECT LESSONS.

1. Make a list of twenty lessons on familiar animals; and explain the order in which you have arranged them.

2. For what purposes are lessons in form and colour given to Infants? Name the order in which the principal plane figures should be taught.

3. Name the qualities you would select in giving an object lesson to Infants on "steel"; and state the experiments or illustrations by which you would elicit the ideas before giving the names of the qualities.

4. Point out some of the uses of object lessons in Infant Schools, and illustrate your answer by short notes of a lesson on "the whale" *or* on "iron."

5. Detail the apparatus required for lessons on "a coal mine," and on "the seasons," and draw the diagrams required for the latter.

6. Show what is the proper use of the blackboard as an aid to recapitulation. Give a specimen of the sketch which should appear on the board at the end of a lesson.

NOTES OF LESSONS.

A choice is always given of one out of four or five subjects. The following are examples of those set: Coral, Blackberry, Plumb-line, New York, Medieval Castle; Union Jack, Tin, Leaves of Trees, Foot Rule, A Railway Station; A Bird's Nest, Steam Hammer, Suez Canal, The Armada; The Oak-tree, The Alps, The Revolution of 1688, The Pump; A Railway Ticket, The Thermometer, The Conquest of Wales, A Composition Exercise on Industry.

PAPERS SET TO FIRST YEAR STUDENTS.

JULY, 1895.

1. Faulty lessons partake too much of the nature of a lecture, an examination, or a chance conversation. Develop this statement.

2. Write notes of a lesson on one of the following: (1) A Frog (Infants), (2) The Parcel Post, (3) The Peace between China and Japan, (4) The Force of Example.

3. Show that some of the class subjects may be taught entirely, others largely, by object lessons in the lower standards.

4. Draw up a list of rules for the use of a School Library, and name a dozen books, including Fiction, Biography, and Popular Science suitable for scholars in Standards VI. and VII.

5. Mention appropriate prizes and honorary rewards for (*a*) Infants, *or* (*b*) Older Scholars.

6. What apparatus for teaching Geography, *or* Drawing, *or* Mechanics, may be made by teachers and elder scholars? Describe the process of manufacture in any one case.

7. Indicate the uses and abuses of the Kindergarten System. To what extent does it cultivate habits of observation and reflection?

8. What do "tasteful reading," *or* "tasteful singing" imply, and how can they best be cultivated in school?

9. In what way are Geography and History related as studies, and how may they be taught so as to mutually assist each other?

10. Give arguments for and against the use of a *Memoria Technica*, or artificial system of memorizing grammatical rules, scientific formulæ, and the chronological order of events.

JULY, 1896.

1. Write notes of a lesson on one of the following subjects: (1) A Box (Infants), (2) Buttercups and Daisies (Infants), (3) Water, (4) The Barometer, (5) Ice.

2. In teaching History show how the principle of Association of Ideas may be utilized. Show the necessity of giving a knowledge of the Geography of a country in teaching its history.

3. How may the exercise in Composition, which is given in Standard V., be gradually led up to from the earliest stage of school life? Give an account of a lesson in Composition to Standard V.

4. What apparatus would you require for the teaching of Geography in Standards I. and II.? How would you teach the meaning and use of a map, and how would you give the children the idea of scale?

5. Show how you would teach the meaning of Subject, Predicate, and Verb to a class of Standard II. Criticise the following definition of a verb: "A verb is a word which tells us what a thing does, or what it suffers, or what state it is in."

6. What should be the aims of Object Teaching? How would you attempt to get the greatest benefit from a course of Object Lessons? Make out a list of twenty Object Lessons for (*a*) a county school; (*b*) a town school.

7. In what other ways, besides the attainment of a good educational standard, may a school seek to render service to the children who attend it?

8. What is meant by Attention? What are the best means of cultivating the power?

9. Describe the proper position of a child whilst writing, and show the ill effects of a bad position.

JULY, 1897.

1. Write notes of a lesson on one of the following subjects: (*a*) A Brick; (*b*) Simon de Montfort; (*c*) The Nile; (*d*) The Completion of the Predicate.

2. In teaching children to work problems in Arithmetic, sketch and illustrate your method of procedure when dealing with a question of a new type.

3. What illustrations may you use with advantage in teaching History? Explain how you would use some of them in a lesson upon some historical event.

4. What is the educational value of working or pricking outlines of animals or other objects?

5. To what extent would you use abstract numbers in teaching Arithmetic to young children?

6. What would be your lessons for the first quarter of a school year if you had to teach Geography to a class in Standard I.?

7. On what lessons would you rely most for cultivating the reasoning powers of children?

8. How would you begin to teach children to draw to scale?

9. Give some reasons why children should be trained to answer in complete sentences.

JULY, 1898.

1. Write notes of a lesson on one of the following subjects:

(1) India-rubber (Third Standard). (2) Plough (Infants). (3) Indian Mutiny. (4) First notions of ratio and proportion.

2. On what principles would you make selections for recitations in Infant Schools and Junior Standards?

3. How do simple lessons in measuring and easy occupations which involve measuring help to make a child's ideas of number and magnitude clearer?

4. What are the causes of, and remedies for, restlessness in a class of children?

5. In teaching Drawing, what kind of mechanical aids quicken and further the use of the eyes, and what kinds tend to "make the eye lazy"?

6. In what way can Drawing in Elementary Schools serve (1) for practical utility, (2) for the cultivation of taste?

7. What advantage has a series of short selections over a continuous narrative as reading matter for literary purposes in Elementary Education?

8. Give some concrete illustration of the process of dividing 30 into three parts that shall be in the ratio of 2, 3, and 5.

9. Under what heads could you classify the information which you would wish children in Standard III. to acquire concerning the county in which they live?

10. How may children be best taught to avoid cruelty to animals, and common mischievous habits, such as stone-throwing, playing with fire, etc.?

N.B.—In each of the above papers only SEVEN *questions might be attempted.*

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